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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week . . . All Family Fun
Shaggy Insect Stories
Give Up, Man?
You Can't Win
Movies Are Better Than Ever

Stories of the Week . . . All

At this time of the year it's too warm and humid to generalize, specifize, or philosophize. So this "Dope" anthologizes and temporizes. All jokes.

"You'll never become a true Alaskan," a 59er was told, "until you've downed a pint of whiskey without stopping, made love to an Eskimo, and shot a bear."

Our hero manfully gallulluped the pint, and staggered dizzily out into the snowy night. Hours later he limped back into the saloon—his clothes tattered, his face and arms clawed.

"I done two of them things," he croaked, "but I couldn't find an Eskimo to shoot."

As a World War II aide to his famous father, second Looey John Eisenhower took an oral message to a front line colonel.

"My father wants you to reinforce your right flank," reported John.

The colonel didn't know him from Adam.

"Izzat so?" he retorted. "And what would your mommy like me to do?"

Fresh out of medical school, Doc Junior took over Doc Senior's regular patients while his father went away for a long-deserved vacation.

"Guess what, Dad," sonny-boy excited upon the latter's return. "I cured Mrs. Richbich's chronic indigestion!"

Sadly the old doctor ruminated:

"I should be proud of you. However, you ought to be informed that Mrs. Richbich's perennial burping financed your seven years of collegiate training."

Family Fun

Sally's mother had warned her that if she didn't stop sucking her thumb she'd swell up until she busted wide open.

Next day the little girl's obviously pregnant aunt paid a call.

"Yah-yah, Auntie," sang out Sally. "I know what *you* been doing."

"My brother-in-law borrows so much money from me," a

(Concluded on Page 8, Col. 1)

What's Effect on 1960 as—

Late Heat Wave Pushes Cooler Sales to New Peaks

DETROIT—As the nation went well past the second week of the longest, hottest "warm spell" in many years, following upon a Summer of favorable weather conditions for air conditioning in many areas, the industry seemed headed for a probable record sales year, but with many asking these questions about next year:

Q. What effect will the late heat spell, and this year's good sales have on the next sales year?

A. Unless there is a major decline in general business and employment conditions, most of the industry's top sales brains look forward to the biggest year in the industry's history. The terrific late Summer heat wave will be a major factor in next year's market, they think.

Q. Are there any shortages of equipment now?

A. There have been shortages and late delivery on various types of equipment since early Summer (that is to say, a prospective purchaser probably had no difficulty in getting air conditioning, but in many instances neither the dealer nor the purchaser might have been able to get the particular make, model, or type desired). The recent hot spell has resulted in rather severe shortages in some areas.

Q. Are there likely to be any shortages of equipment going into the next selling season?

A. Shortages are possible, although not considered probable by industry sales leaders. Distributor and factory inventory of room air conditioners as of Sept. 1 will be the lowest in years—possibly 200,000 units or less. Inventories of other packaged air conditioners—residential and commercial units—is bound to be low because manufacturers held off on building any large quantities early in the year, and the general improvement in sales took about everything that most producers could make later in the season.

It is a safe bet that manufacturers will start producing to fill up their pipe lines much earlier this coming 12 months than last, *if* shortages of parts and materials resulting from strikes in the metal industries don't hold up production. If such holdups should occur, then some shortages in end-use products might show up.

Q. Just how good have sales been this year?

A. While sales have been spotty in some areas for a time (early Summer activity was slow in some parts of the South and Southwest) increases were heavy in northern metropolitan areas, and the over-all improvement was good enough to probably push room air conditioner sales to the 1,600,000 figure, and sales of central residential systems to close to 200,000 units. Even the

(Concluded on Page 17, Col. 4)

IRS Proposes To Tax All Room Air Conditioners

WASHINGTON, D. C. — The 10% Federal excise tax on room air conditioners will be applied to *all* room air conditioners, regardless of size or style, possibly as early as Nov. 1, and in all probability no later than Dec. 1. Presently, the tax is applied only to units rated at less than 1 hp.

A proposed new Treasury Department regulation was published in the *Federal Register* Aug. 25, spelling out the provisions for imposing the tax, which are prescribed by the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury. A request for a public hearing on the proposed regulations must be made within 30 days. A "regulation" is said to carry more legal weight and influence on a court than an IRS ruling.

As for the effective date, it is stated that the regulations shall not become effective "before the first day of the first calendar month which begins more than 30 days after the publication of Regulations in the *Federal Register* (it is presumed that this means publication of the final, approved regulation). Thus, if there were no hearings or other delays in the next 30 days, it could be presumed that final publication could be made before Oct. 1, with the *effective date* Nov. 1.

However, there was some indication that Air-Conditioning & Refrigeration Institute (ARI) would ask for a hearing, while the Room Air Conditioner Section of National Electrical Manufacturers Association (NEMA) gave indications that it was satisfied with the regulations and wouldn't seek to be heard.

The new regulations, which will be the definite interpretation of Section 4111 of the Internal Revenue Code of 1954, also wipe out previous revenue rulings on household refrigerators and freezers, eliminating

(Concluded on Page 17, Col. 1)

UL Issues Standard For Heat Pump

CHICAGO — First edition of its heat pump standards of safety has been published and put into effect recently by Underwriters' Laboratories, Inc. here.

Labeled UL 559 and dated August, 1959, the standard has been prepared as a result of careful study by the Laboratories' staff, C. C. Fitzsimmons, UL engineer, announced.

It has been reviewed by and discussed with manufacturers of listed heat pumps and others known to have an interest in the requirements which the standard contains.

It has been approved by the Laboratories' casualty and electrical councils which are comprised largely of safety and electrical inspection authorities throughout the United States.

The standard is in accordance with the Laboratories' bulletins of May 21 and July 10, 1959, with certain minor revisions of an editorial nature, Fitzsimmons said.

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Investigation Lessens Blame On Air Conditioners for N. Y. Blackout

NEW YORK CITY—Both the official report of a commissioner appointed by New York City's mayor, and further investigations of the Consolidated Edison Co., took some of the burden of blame for the 12-hour power failure here on Aug. 17 off of air conditioning—but the failure and its causes remain a "hot" subject, and further investigations will be made.

Three minor power failures affecting small areas in the week following Aug. 17 served to accentuate public and official interest in the problem.

The official report made by Armand D'Angelo, Commissioner of Water Supply, Gas, and Electricity, stated that the department's engineers believe that the power supply network in the affected area is not adequately designed.

"According to Consolidated

(Concluded on Page 4, Col. 4)

Let There Be Light? No, Let It Be Cool

NEW YORK CITY—Lack of electric lighting produced "far fewer complaints than the sudden stoppage of air conditioners and fans," Consolidated Edison officials said in commenting on the calls and "kicks" they had from users about the Aug. 17 power failure.

Jury Recommends Code Study After Lack of Combustion Air Kills Two

EVANSTON, Ill.—A blue-ribbon coroner's jury has found that the death of Mr. and Mrs. James W. Franklin in their home here a few weeks ago was caused by carbon monoxide poisoning.

On the basis of an investigation conducted by utility company and professional engineers, the jury indicated that the main contributing factor to the build-up of lethal quantities of the carbon monoxide gases had been lack of a combustion air supply for the gas-fired year-round air conditioning system. The air conditioning unit itself was not mentioned in the jury's report.

The jury recommended (1) that Chicago, Evanston, and other suburbs study their building codes and revamp them to better regulate the installation of air conditioning and heating units, and that (2) public utility companies cooperate more close-

(Concluded on Page 4, Col. 1)

It Was a Cool Week In Houston, Man!

HOUSTON, Texas — Everything was "real cool, man," during a recent promotion here.

York-Houston dealers participating in a "York Cool Everyone Week" served their customers sno-cones, "Kool-Aid," and gave away packages of "Kool" cigarettes.

Persons registered for a free trip to Europe and to Nassau and still other prizes included soft drinks, cool jazz records, and a "real" snowman created by the Shamrock Hilton pastry chef Kurt Ammann.

Houston's normally hot weather even cooperated to make it one of the coolest weeks in the past five years and, as a result, the "cool week" was extended to a two-week promotion.

SHOWN CONGRATULATING Herman F. Lehman (center), General Motors vice president and Frigidaire general manager, on the company's biggest sales month in history in July is Roger M. Kyes, General Motors vice president and group executive (right), and C. H. Menge, Frigidaire general sales manager. July sales were 8% above the previous high month.

Opposing Views Aired on Effects of City's Proposed 'Noise Control' Law

CHARLESTON, W. Va.—An ordinance pending in City Council would have the effect of prohibiting the use of air conditioners and fans in Charleston, in the opinion of C. L. Kerstein, manager of Kerstein Engineering Co., local air conditioning firm.

Emerson Carson, chairman of council's ordinance committee, received a letter from Kerstein stating that the ordinance is a bigger nuisance than the noise it is supposed to control.

"The whole purpose of this ordinance," Carson declared, "is to secure relief for people who sustain nuisance from certain types of noisy air conditioning or air movement fans."

He added that a noise scale had been incorporated into the ordinance, based on the most advanced studies available.

"I can say that any piece of equipment which meets American standards won't be affected," Carson asserted.

He pointed out that the Warm Air Contractors Association of Charleston held a special meeting to suggest changes in the ordinance.

"They have made certain recommendations that will receive every consideration from council," Carson continued.

"I want to emphasize that we're not attempting to harass anyone. We're just trying to afford the same protection in this field that citizens have in other ones and the same one that they have in most cities of the United States."

Meanwhile, it was reported that the ordinance on air movement equipment has caused city council considerable difficulty. It inadvertently passed a law a few weeks ago that would have had the effect of making it necessary to obtain a permit from the building commissioner to install a household fan," one official here pointed out.

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When the words "Copper Refrigeration Tube" are on a carton of copper tube, you can be sure special care goes into the manufacture of that tube.

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Specify Copper Refrigeration Tube for refrigeration lines, air conditioning coolant lines, bottled gas lines and other special uses. For water lines and other applications, your supplier has a complete line of Copper Water Tube.

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Look for "Made in U.S.A." on all copper tube. The manufacturer's brand name and this symbol also are used by many U.S. copper and brass mills to designate tube products that meet the exacting standards of American industry.

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Specify Copper Tube for Air Conditioning and Refrigeration

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F. B. Stubinger Dies After Heart Attack

BUFFALO—Fredric B. Stubinger, 58, advertising manager of Buffalo Forge Co., died recently in Kenmore Mercy hospital following a heart attack.

Stubinger had been instrumental in guiding the advertising program of Buffalo Forge and its subsidiary, Buffalo Pumps, Inc., for 38 years. He came to the concern in March 1921 as assistant advertising manager and was promoted to advertising manager two years later.

Senate Unit Delays Action On Dealer Franchise Bills

WASHINGTON, D. C. — Action on three bills to give certain manufacturers the right to provide territorial securities in their dealer franchises has been postponed until next term by the Senate Interstate Commerce Committee.

The bills are S. 997, S. 2042, and S. 2047. A committee staff member was quoted as saying the Senators feel the measures need further study because of their controversial nature.

British To Show Coolers

LONDON, England—The biggest and most complete display of the British air conditioning industry ever shown in the United States will be part of a 17-day British exhibition of industry, technology, science, and culture in the New York Coliseum next June 10-26, it was announced here recently.

The Federation of British Industries is sponsoring the event.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

These shoes get around...they have to!

Lau maintains the largest warehousing and inventory operation in the blower industry. For this warehouse expert to ship a quantity of any size and type blowers immediately, he must really know his job. Like his counterparts at Lau factory warehouses in California and Canada, he does know his job—and he knows it well. For immediate, dependable delivery from a location *near you*, write or call Lau today.

The Lau Blower Company • Dayton, Ohio

Jury Recommends--

(Concluded from Page 1, Col. 5)

ly with municipalities in enforcing ordinances regulating such units.

Those investigating the cause of the carbon monoxide concentration placed the blame squarely on the lack of oxygen in the Franklin house. The house was tightly sealed in its construction, and two basement windows, which those familiar with the family said in former years were usually left open, had been locked tight because the house had been broken into and robbed earlier this year.

As the oxygen was used up in the basement, the investigators concluded that a resulting vacuum caused a down draft in the chimney and combustion gases remained in the basement and eventually went through the house, causing the death of Mr. and Mrs. Franklin and two French poodle dogs.

"The lack of combustion air to any fuel burning equipment is the whole key to this problem," a member of the jury who is also a man with long experience in the air conditioning industry, told the NEWS.

"It is a factor which must be given serious consideration by the industry in the design of air conditioning systems for modern homes," he declared. "These homes are being sealed air-tight in many instances, and there must be a provision for outdoor air direct to the room or enclosure holding the fuel burning equipment at least in the order provided by the A.G.A. standard of 1 sq. in. opening to the outside for every 1,000 B.t.u. rated input of the fuel burning equipment.

"Furthermore, it should be mandatory that this opening be at least 10 ft. above ground level, and that all precautions be taken to preclude its being blocked or closed in any way."

The blue-ribbon jury heard, but did not incorporate in its ruling a number of suggestions presented by three members of the Chicago branch of the Illinois Society of Professional Engineers.

One of their recommendations apparently would seek a provision in ordinances which would eliminate "return air grilles." According to one air conditioning expert, the return air grilles had no bearing on the problem involved in the carbon monoxide concentration. To design systems without return air grilles (which would virtually mean that 100% fresh air would have to be circulated) would make air conditioning prohibitive summer and winter.

The engineers proposed also that ordinances be enacted to require that mechanical and electrical air conditioning and heating units be "designed and sealed" by licensed engineers.

N. Y. Blackout--

(Concluded from Page 1, Col. 5)

Edison," said the official report, "the annual average of growth of the power demand in the affected area, since 1953, has been 6.7%. Consolidated Edison increased its capacity during the same period, at an annual average of 8%.

"Thus, seemingly, the added capacity has kept pace with the growth, although calculations show that Consolidated Edison overestimates its capacity.

". . . It is the opinion of our chief engineer that there was an insufficient feeder capacity on the West Side, causing an overload. We believe that the system was strained even before the beginning of a chain reaction of feeder failures."

D'Angelo stated that he is appointing an outstanding independent engineer to make a thorough and comprehensive study and analysis of the Consolidated Edison feeder system in the affected area and to report on any inadequacies which exist and any remedial steps which must be taken.

Con Ed's Reply

In a reply to Commissioner D'Angelo's report, Consolidated Edison declared that "the evidence to date indicates there were no overloads." The utility further stated:

"We categorically deny any inadequacy in our system. Our entire system is designed to meet any reasonable contingency. The fact is that our system is designed to carry the peak load in any network area, even with any two feeders out of operation.

'No Objection to Study, but'

"We haven't the slightest objection to Commissioner D'Angelo's designation of an independent engineer to study and analyze the system in the Central Park area or anywhere else. We would have expected, though, that the department would have withheld judgment until it had all the evidence, including the report of the independent engineer."

A newspaper report said that "Consolidated Edison has reported that more than three times as many kinds of electrical appliances are used in homes now as were used 15 years ago and that it is not always possible to know in which area the load will increase most.

"With the widespread use of air conditioning, the peak season for consumption of power has shifted from winter to summer. Last week's breakdown came on one of the hottest days of the summer, and lack of lights produced far fewer complaints than the sudden stoppage of air conditioners and fans."

Eleanor Comments

The power failure and its causes was big news in New York for a week following the event, and it drew editorial comment from many pundits, including Mrs. Eleanor Roosevelt, who wrote:

"When anything like this happens in a big city, it makes one realize how dependent one is on modern conveniences. If one must live under primitive conditions, it is far better to do so in the wilderness and have it all primitive. Modern plumbing without the equipment to use it, as well as our modern gadgets when they cannot be used, are more bother than if we could really live in the woods temporarily without them.

"From what some knowledgeable people tell me, I gather that our trouble is that those who are responsible for planning for the future have not been willing to face the need for the extra expense of financing equipment which requirements for modern living have put on our power supply.

"Air conditioning uses much power, and there is more and more of it. And I am told we will have to double the capacity which we now have or else we are apt to have a repetition of the difficulties such as the city has just been through."

BY FARBER DESIGN

*AM-pak . . . Perfect Package for Air Moving Units

For evaporative condensers, air handling units and heavier heating equipment, Utility has created AM-pak, an entirely new design priced for high production, combining efficiency with flexibility, strength with perfect dynamic balance. Ranging in diameters from 10 to 36 inches, the rugged blower wheel has 64 specially curved blades, features a conical center disc construction and operates at static pressures up to 6¼" W.G. You deliver greater air-power with less horse-power when your equipment is built with AM-pak.

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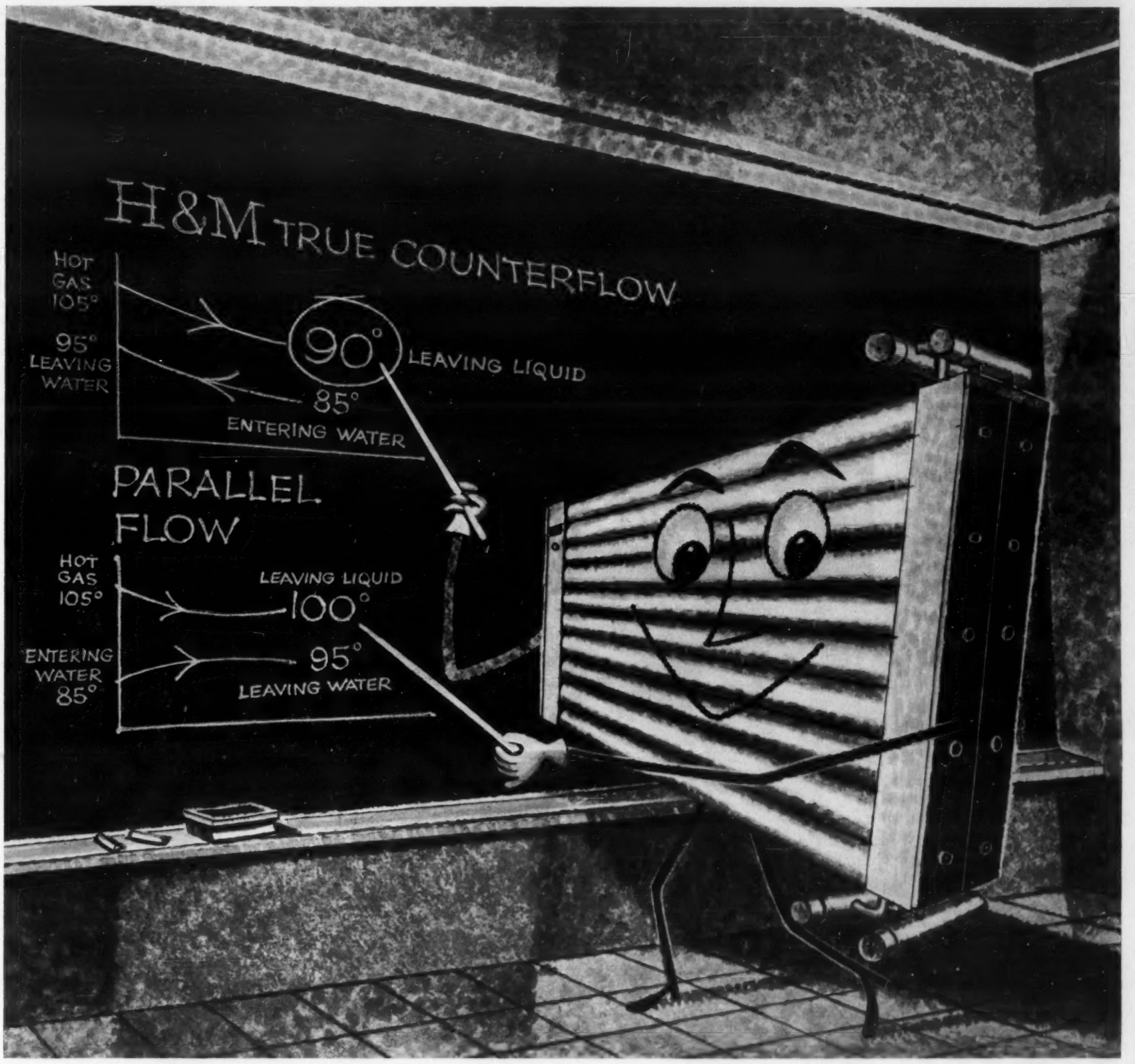

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You will if it's an H&M water-cooled condenser with true counterflow heat exchange

In Halstead & Mitchell water-cooled condensers the refrigerant and cooling water are introduced in true counterflow, as shown in the chart. Test results indicate an average of 15 degrees of subcooling in H&M condensers. Liquid refrigerant leaves at a lower temperature and system capacity is increased about ½% for each degree of subcooling without additional power input.

H&M condensers feature double-tube design, seamless copper tubing, brass headers. End plates are easily removed for quick, safe, *mechanical* cleaning. Water tubes are generously sized for low pressure drop and minimum maintenance. Available in ½ to 25 ton capacities, condenser types are Standard (½" and ⅝" O.D. water tubes), Heavy Duty (⅝" O.D. water tubes), and Sea Water (⅝" O.D. cupro-nickel water tubes), and are U/L approved. Order them from your refrigeration wholesaler and use them singly or on racks. Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.

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Augenstein Urges Air Force

Accent the Positive In Seeking Funds For Cooling To Up Personnel Efficiency

DAYTON—With the Armed Forces steadily increasing its use of air conditioning to improve the efficiency of its processes—the use of air conditioning in this area having expanded over 10 times in the last 10 years—why is such hesitancy being shown in providing air conditioning to improve the efficiency of a more important factor, manpower?

That was the question put by Paul M. Augenstein, president, Airtemp Div., Chrysler Corp., at the recent refrigeration and air conditioning conference held by Headquarters, U. S. Air Force, at Wright-Patterson Air Force Base here.

Augenstein told the Air Force officials that they might do much better in getting appropriations for air conditioning for personnel, which the Air Force indicates it needs to improve efficiency of personnel, if they adopted a "positive" rather than a "defensive" attitude in seeking government funds for such purposes.

Cites Competitive Atmosphere

"Whether we like it or not, we live in a continuing competitive atmosphere — an atmosphere that largely determines the course of action and the destiny of our world," the Airtemp president stated.

"As a professional business manager, I live in a continuing competitive atmosphere. I live with the constant requirement to compete internationally, nationally, and locally for the most efficient management of materials, money, and men in an atmosphere of competition to earn a bigger share of everyone's spendable income through more efficient and higher quality management of these three major resources—to produce a return on investment that will justify the original expenditure.

"You, in turn, as members of the Air Force or any other government branch, live in exactly this same kind of climate. You compete every day for the management of materials, money, and men on an efficient productive basis to accomplish your objectives in a manner that will justify your expense.

Sees Hesitant Attitude

"As I look at you from the standpoint of the air conditioning industry, I observe a hesitant attitude that I think should and must be changed with regard to the expenditure of funds for air conditioning equipment.

"Perhaps we are at fault as an industry for not having given you sufficient justification for such spending since you answer to the general public just as do we to the stockholder segment of that public.

"In both business and government, someone will always be looking over our shoulders and pointing the finger of suspicion at every expenditure. This is normal procedure and good for us too, because it forces all of us to manage our materials, money, and men in the wisest fashion. But I long ago discovered that a hesitant attitude gets few appropriations for industrial capital investment.

"I suspect you may have discovered that a hesitant attitude has the same effect on your appropriations. A performance goal is only achieved by the use of sound facts and figures presented in a positive manner!

"Apparently you feel no qualms concerning the expenditure of public funds for process air conditioning, that which maintains temperature or climate to enable inanimate, complex machinery or weapons—and the devices that deliver these weapons—to perform in their most efficient manner.

"The use of air conditioning in this area has expanded over 10 times in the last 10 years and by 1960 there will be nearly a half billion dollars worth of air conditioning equipment used by the services and government for this purpose.

"If this be true, then let me ask you why there should be *any* hesitancy in asking for similar funds to be spent in making the men or the people who design, produce, maintain, or operate these same materials, perform their functions at the highest point of efficiency.

"For example, the computer must necessarily be air conditioned or the heat it generates may destroy it and its function. How can we ignore the fact that all computers are only as efficient and as accurate as the material which is fed into them for processing and that somewhere, no matter how far down in the chain of events, some human being must initiate this process?

"The efficiency, the productivity, the alertness, and the accuracy of that human being directly affects the value of the result. The performance of the people who do the basic work *can* be improved by air conditioning. It seems to be penny wise and pound foolish to provide the proper climate for the machine and not for the man."

Augenstein recommended that the Air Force officials again read GSA Bulletin PBR 161. A 9½% increase in work production, a slight decrease in errors, a 2½% decrease in absenteeism and an important contribution to morale cannot be ignored in any professional business management!

"Just ask yourself this question," he continued. "'If you were approving the cost of an inanimate design that would pay for itself with a 1.5% improvement in productivity and the facts showed your design would actually give you from two to four times this per cent of improvement, would you hesitate to justify a capital or an expense outlay to accomplish the job?'

"Ask yourself this question, also, 'If you had reason to believe this expenditure, in addition, would give you other measurable benefits, such as a higher degree of readiness and a

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The more than two hundred Tecumseh authorized wholesalers located in key cities across the country, are in business to serve you. They are, in fact, an extension of our own service department. Each has a well-established business, tailored to give you fast, efficient service. Because of their close association with Tecumseh, these authorized wholesalers have the advantage of being exposed to more diversified compressor applications and, accordingly, their salesmen are more likely to be better experienced in handling your particular problem. Wholesalers stock replacement compressors and parts in adequate volume, based on usage figures in their specific areas. This should normally guarantee you immediate replacement. However, in emergencies, your wholesaler can obtain expedited compressor delivery out of the Tecumseh warehouse at Marion, Ohio. To insure the best and most complete service organization, the Tecumseh Wholesaler Program provides greater incentives to the wholesaler. No wonder this man works for you!

greater degree of reliability, would you hesitate to make the expenditure required?'

"Your answer undoubtedly would be that good business judgment would force your adoption of a program to insure achieving these benefits.

"Let's relate this to the management of men. Why should you feel a sense of impropriety in making the same expenditure to enable the manpower involved to achieve the same increase in work production and increase in reliability and readiness to perform.

"To look at another aspect, the people who work for the Air Force or, for that matter, in any governmental capacity, are obtained from a competitive labor market exactly the same as we in the air conditioning industry recruit our labor, be it mental or physical.

"Commerce and industry are spending huge sums to improve employe comfort and morale. While they have not always been able to prove the efficiency benefits in advance with complete accuracy, they do accept the fact that work production will increase.

Sees Less Absenteeism

"There will be a decrease in absenteeism, a reduction in labor turnover and improvement in morale. These alone will pay sufficient dividends on the investment to warrant their financial guardian's approval on a job-well-done basis. The comfort factor is merely the means to a desirable end result.

"Exact figures are somewhat difficult to secure, but I am told that over 90% of the air conditioning now in use by government and the Armed Services is being used to provide climate for materials, machinery, and processes, 6 to 8% for administrative use and only 2 to 4% for living units.

"In the final analysis, all of the machines and materials are originally necessary for the achievement of a secure, democratic, high standard-of-living.

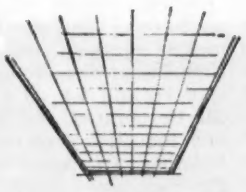
"The groundwork must continue. The analysis of value versus cost is a never-ending program, but the first phase is over. There is now sufficient proof to justify consideration and adoption of air conditioning regardless of whose money is being spent. It is time for all of us to come out of our shells and apply air conditioning where and when it will achieve the objectives of good business management.

"You no longer need to be on the defensive! In fact, as this industry sees it, the Air Force and all other governmental agencies will be running the risk of losing the competitive race if you do not adopt this attitude."

NEW OFFICERS of the Joint Industry Program Committee pose at the group's meeting in Washington, D. C. Seated, left to right, T. C. Alexander, Denver, Refrigeration & Air Conditioning Contractors Association, vice chairman; William P. Scott, Oakland, Calif., Mechanical Contractors Association of America, chairman; Martin J. Ward, Washington, D. C., United Association of Plumbers and Pipe Fitters, treasurer. Standing, left to right, are the three co-secretaries: William C. O'Neill, Washington, D. C., United Association of Plumbers and Pipe Fitters; Louis E. Thurber, Jr., New York City, Mechanical Contractors Association of America; and J. O. Hendrickson, Washington, D. C., National Association of Plumbing Contractors.

each a case history in

compressor know-how, service and application



11:30 A.M. Tecumseh wholesaler, John Jones, receives call from serviceman at local supermarket. Needs 1 HP replacement compressor for inoperative case. Also has noticed that small frozen food case is cycling on overload.

11:45 A.M. Proper Tecumseh compressor together with an electrical kit, recommended by Jones for complete electrical component replacement, is sent out to supermarket on wholesaler's truck.

3:30 P.M. Serviceman has installed the replacement compressor . . . the primary reason for his service call . . . along with the new electrical components and a complete check of the smaller case. Both jobs completed in one call, in less time.

The above case history of a typical service problem indicates the quick response you can expect from your Tecumseh authorized wholesaler. It does not presume that your own servicing outlets cannot handle the bulk of service calls themselves. Rather, it means that whatever the request, the Tecumseh wholesaler nearest you stands ready to do his part, knowing that time is of utmost importance. Call on him when you need him. We think you will both appreciate it.

A complete list of authorized Tecumseh wholesalers is available on request.

TECUMSEH

The Leader Serving Leaders in the Air Conditioning and Refrigeration Industries

TECUMSEH PRODUCTS COMPANY

MARION, OHIO — TECUMSEH, MICHIGAN

EXPORT DEPT: P. O. Box 2280, 24530 Michigan Ave., W. Dearborn, Michigan

CANADA: Tecumseh Products of Canada Limited, 1667 Dundas St., London, Ontario.

Dean Fields Named McCord President

DETROIT — William G. Hancock, chairman of the board and president of McCord Corp., has relinquished the office of president and chief executive officer after 40 years with the corporation.

D. S. Fields

He will continue as chairman until the end of the year, when he plans to retire.

Dean S. Fields, first vice president, succeeds Hancock as president and chief executive officer. Fields joined McCord in 1939 as manager of the production planning and material control department, later serving as works manager and manufacturing vice president.

Lester M. Elliott, vice president, finance and accounting, and former controller, replaces Fields as first vice president. He joined McCord in 1945.

New Catalog Issued By Imperial Brass

CHICAGO — A complete line of products for air conditioning and refrigeration work is described in a new 40-page catalog now available from The Imperial Brass Mfg. Co., 6300 W. Howard St., Chicago 48, Ill.

Catalog No. 82 covers many of the tools and supplies needed for most repair, maintenance, or installation jobs, the company said.

Among products included is the entire line of Imperial tubing tools. New additions to this line are: a new production flaring tool; a higher capacity quick-adjust tube cutter for cutting tubing 2 to 4 in. in diameter; a screw-type swaging tool, and tools for working with nylon or polyethylene tubing.

L. H. Schoenthal Dies

MIAMI BEACH, Fla.—Lester H. Schoenthal, 70, a refrigeration engineer who came here from Pittsburgh 20 years ago, died recently.

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

man in the bus was saying, "that every night my wife goes through *his* pockets."

Growled Jimmy:

"Here I am 10 years old already, and what have I got to show for it?"

Billing for a vaudeville performance read:

"Eddie Cantor *with* George Jessel."

Georgie protested. So the house marquee was altered thusly:

"Eddie Cantor *but* George Jessel."

Late for Sunday school, a boy presented his excuse.

"I was going fishing, but daddy wouldn't let me."

"Your father is a fine man. No doubt he explained to you why you shouldn't fish on Sunday?"

"Uh huh. He said there wasn't enough bait for the two of us."

Shaggy Insect Stories

Once there were two weevils. One worked day and night and finally became a big success.

The other just lay around in a cotton boll all day and remained the lesser of the two weevils.

First mosquito: "What are you so happy about this morning?"

Second mosquito: "I just passed my screen test."

Give Up, Man?

Outside a small shop its sign read:

SHOES REPAIRED WHILE YOU WAIT.

Joe left his brogans to be half-soled. To his dismay he was told to return next Friday.

"You advertised 'repairs while waiting,'" Joe accused.

"That's right. You'll wait for these shoes, won't you?"

Old Indian chief stood atop a small mountain with his young son.

"Some day, Little Feather," the old Chief solemned, sweepingly pointing toward distant horizons, "all this land will belong to us again.

"Paleface people going to Venus and Mars."

"There isn't an Irishman left in Eire," grunted an Englishman at a Boston nightclub.

"Every blasted one of them is over here singing Irish songs."

Jealous wife inspected her husband from collar to shoelaces each evening. Trace of spare hair (usually his own) would call down a torrent of wrath.

This night he was clean as a whistle.

"You, you brute!" she snarled, "now it's bald headed women!"

You Can't Win

"Real good of you to drive out to see my husband, doctor. I realize how busy you are."

"No trouble, Mrs. Goode. I had an emergency call next door, so I'm killing two birds with one stone."

"You told me the stork brought me," accused Jimmy.

"Yes, dear."

"I weighed eight pounds, you said."

"Yes, dear."

"I have news for you, mother. A stork's wing-spread, according to my calculations, is insufficient to carry an eight-pound load."

Fellow carrying a big bass drum frantically tried to signal a taxicab.

"Whassamater, Bub?" gargled a New Yorker. "Lose your parade?"

"It will pay for itself," affirmed a home freezer salesman, "by savings on your food bills."

"Wish I could take advantage of it," sighed Mrs. Housewife. "But we're paying for our washing machine by saving on laundry bills, we're paying for our home by saving on rent, and we simply can't afford to save any more money at this time."

"The bigger they are," warns teen-age Karen, "the harder they maul."

Beside a stalled car stood a frantically-signalling woman. Chivalrous motorist stopped, looked, and changed her flat tire.

"Please let the jack down easy-like," she implored Mr. Chivalrous, as he finished the job. "My husband is asleep in the back seat."

Dear Ann Landers: "I stayed out until 2 o'clock in the morning. My mother raised a fuss. Please tell me, did I do wrong?"

Reply: "Try to remember."

Movies Are Better Than Ever

Portion of the movie, "Anatomy of a Murder," was filmed inside the Marquette (Mich.) jail.

Scenes were re-shot so often that a prisoner sang out:

"At this rate, we'll all get out of here before Jimmy Stewart does."

Filming of a Western was observed on location by a lady tourist. During one of the frequent lulls she asked a cameraman:

"Why do they take the same scene over and over again?"

The deadpan reply:

"Have you considered how many movie theaters there are?"

Satisfied, she nodded her thanks, and departed.

Blonde at the bar ignored the attentions of a lonely male.

"Excuse *me,*" he sarcasticked, "I mistook you for my mother."

"That I couldn't be," withered she. "You see, I am married."

Three-Month Job Takes 3 Days

40 Tons of Air Conditioning Installed In Pentagon In Record Time Following Fire

WASHINGTON, D. C. — "Something of a record" for installing air conditioning was scored by United Clay Products here in the wake of the recent Pentagon fire.

On the Tuesday following the blaze, the Washington distributor for Carrier Corp. was given an order to install—but fast—40 tons of year-round air conditioning for a replacement computer complex which was being transferred to another building.

Ordinarily a 60 to 90-day job, United Clay's around-the-clock efforts paid off. The air conditioning system was switched on just three days later, Friday at 6 p.m., an hour before IBM's giant computer — the biggest this company makes — swung into action.

Morris Fox, vice president of the D.C. Transit Co., whose building was the scene of the rapid changeover, credited United Clay with the "fastest air conditioning installation of its kind."

He said it was all the more commendable because it was done at the same time more than 80 other trades people, such as electricians, carpenters, sheet metal workers, and lathers, effected the lightning conversion of the ordinary office structure into a bustling computer center.

Kent Boucher, vice president of United Clay, says his firm's all out effort began as soon as the order was received. All available personnel was dispatched to the scene as extra equipment and components were rushed from Carrier's Syracuse headquarters and Detroit distributor, George L. Johnston Co.

Engineers pounced on the problem that included exceedingly limited space and sloping walls 4 ft. thick which took 26 hours of air hammering to provide entry for power lines.

The temperature soared into the 90's each day of the accelerated operation, adding to the discomfort of the men working in the cramped space amidst the din of air hammers and cartridge-firing floor nailers.

Boucher said his crews worked 36 hours without sleep, and at one point two men had to be sent home because of heat and fatigue.

According to Boucher, credit for over-all coordination of the various operations goes to D.C. Transit officials Frank Sparshott, engineer of way and structure; Edward Coherd, superintendent of buildings; and Malcolm Mellington, technical aid.

This wasn't the only installation where United Clay's immediate response brought quick cooling to the defense effort.

At the same time, two other computer centers which had to expand operations because of Pentagon emergency, called for air conditioning on a "yesterday" basis.

Again, United Clay's sales, engineering, and service departments meshed their efforts, completing, almost overnight, a spot cooling job of 15 tons for the Corporation for Economists and Industry Research (CEIR) building. The same story held for another CEIR building where 20 additional tons of cooling were installed within five days.

Says United Clay's Boucher, "We're beginning to accept emergencies as a matter of course."

Cooling Approved for Birmingham Post Office

BIRMINGHAM, Ala. — The General Services Administration in Washington has approved a project for air conditioning the Federal (Postoffice) building here.

GSA Administrator Franklin Floete wrote Congressman George Huddleston, Jr. (D., Ala.) that funds for the projects will be included in GSA's budget for the fiscal year starting next July 1 and that equipment would be installed shortly after that date.

Albuquerque School Completes Cooling

ALBUQUERQUE, N. M. — There'll be something new for students and faculty of Sandia High School this fall.

Earlier this year the board of education voted to spend $64,872 to complete the school's air conditioning system. Basis for the system was installed last year when the school was built, but shortage of funds postponed completion. The contract was awarded to Brown & Olds Plumbing Co.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

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- Re-circulated ammonia
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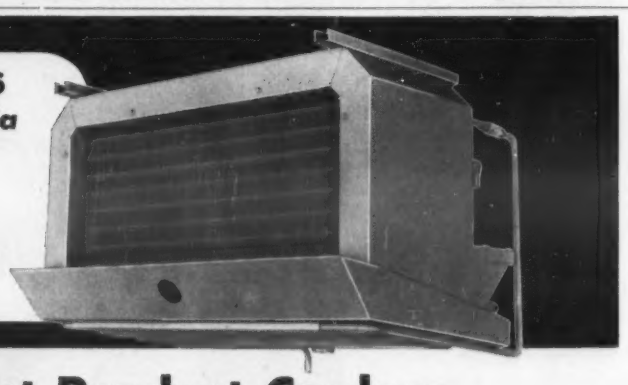

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Better investigate now . . . see how much you can save with a Krack installation. Use the handy coupon below.

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York's 'Sure Thing Theater' Plays Desk Top Circuit Sept. 8-Nov. 14

YORK, Pa.—The York "Sure Thing Theater," starring facts and figures on commercial air conditioning, will play from coast to coast on the desks of prospects this fall, it was announced by York Div. of Borg-Warner Corp.

"Dramatizing the proof that there is no element of risk in the purchase of air conditioning, the desk-top little theater opens on Sept. 8 and closes on Nov. 14," the division reported.

The miniature theater is just one element in York's new fall promotion directed toward helping dealers and distributors make more sales and cash in on hundreds of bonus prizes awarded on a point basis, it was pointed out.

The script demonstrates to the prospective customer how air conditioning will develop more and better customers for him, how he can save by buying in the "off" season, and how he can benefit by a skip payment plan either with or without the convenience of York's leasing plan.

Part of the "Sure Thing" is based on the recent government study which showed a 9% average increase in productivity resulted from air conditioning, plus Minneapolis - Honeywell data showing that a 1½% increase in efficiency would pay for the cost of the installation.

D. H. Crawford, manager of commercial air conditioning sales for York, anticipates that the "Sure Thing" promotion will help move units through distributors to consumers during the normal "off season."

If Crawford's predictions are realized, the company will rack up an increase of approximately 25% over previous record sales of commercial units during the same period in 1958.

Old Documents Need Cooling, So Do People

MONTGOMERY, Ala. — According to Archivist William Letford, the basement of the Archives and History Building here is one place where the trouble isn't the humidity—it's the heat.

Letford said the room, where old newspaper and other yellowing records are kept, needs more humidity and less heat. That's why it has asked for $100,000 to air condition the building.

"Or," he explained, "that is one reason. The awful temperatures, summer and winter, also afflict the human help as well as the old manuscripts.

"The summer readings sometimes soar to a searing 130° around the newspaper and other racks," he continued. "The sun shines directly onto some records. In winter, corresponding cold."

Letford added that the old newspapers go back to the 1820s, some of which can't be duplicated anywhere.

Sen. Bob Kendall of Conecuh and Rep. Emmett Oden of Franklin, obviously impressed by both the documentary and human plight in the situation, said they are sponsoring bills to air condition the three-story repository.

Memphis Garage Installs Cooling

MEMPHIS — Walls' Automotive Service, a garage at South Highland and Southern, has been completely air conditioned by Stephens Bros., local air conditioning, heating, and refrigeration sales and service firm. The 4,500 sq. ft. of garage space is cooled by a 15-hp. Carrier installation.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Fans To Move Lot of Air In Kaiser Center

BOSTON — Air conditioning and ventilating fans in the new Kaiser Center in Oakland, Calif. will move more than a million cubic feet of air per minute when the building is completed.

To do this job, 27 airfoil fans and 16 air distributing units are being supplied by Sturtevant Div., Westinghouse Electric.

The Kaiser Center office building will be the headquarters for the world-wide operations of the more than 50 affiliated Kaiser companies. It will be completely air conditioned by a split system combining ceiling radiant panels and pre-conditioned air.

Numerous ventilating sets and vane-axial fans are also being furnished by Westinghouse for the 28-story office structure and the adjacent shop and garage buildings.

Heaviest Hoist Goes Skyward

LARGEST SINGLE AIR CONDITIONING machine ever built, and the heaviest piece of apparatus of any type lifted into a New York City office building (says Carrier Corp.) is this 70,000-lb. Carrier unit being lofted to the eleventh floor of the Chase Manhattan Bank Bldg.

ALCO'S famous 402

THERMO® VALVES

The Small-Fixture Valve For All Fixtures

NOW AVAILABLE 2 WAYS

- With BUILT-IN PRESSURE LIMITING ELEMENT—to prevent motor overloading and motor burn-out—denoted by the letters P. L. as #402-2F-PL
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Actual Size

Field proven models for all these capacities:
REFRIGERANT-12 • ¼, ½ and 1 Ton
REFRIGERANT-22 • ½, ¾ and 1½ Ton
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The one complete line of refrigerant controls: Thermostatic Expansion Valves • Refrigerant Distributors • Solenoid Valves • Suction Line Regulators • Flooded Evaporator Controls and Reversing Valves

They'll Do It Every Time

by

Jimmy Hatlo

THE MAIN THING IS TO GET YOU WELL, HENRY··· JUST TAKE A COMPLETE REST··· BUT AS LONG AS I WAS COMING OVER TO SEE YOU, I THOUGHT YOU COULD LOOK OVER THESE LETTERS AND DICTATE ANSWERS TO HAZEL HERE, SINCE YOU'RE FAMILIAR WITH THESE ACCOUNTS··· AND THEN IF YOU'LL BRING JUDKINS UP TO DATE ON THE BOOKS····
YEAH··· JUST REST··· BUT DO A WEEKS WORK BETWEEN PENICILLIN SHOTS···
BIGDOME GAVE HIM THE BREAKDOWN IN THE FIRST PLACE··· NOW IT'S DOUBLE OR NOTHING!
AND WHEN TREMBLECHIN IS ABLE TO USE A WHEELCHAIR HE CAN GO BACK TO WORK AS NIGHT WATCHMAN····
BIGDOME WILL GO ON A CRUISE SO HE WON'T HAVE TO SEE TREMBLECHIN SUFFER···
7-1
GETTING BEAUCOUP SYMPATHY FROM THE OFFICE SIMON LEGREE···
THANK AND OUR HAT'S OFF TO MARSDEN AMBERMAN 12 CHESTNUT ST. GARDEN CITY, LONG ISLAND N.Y.
JIMMY HATLO
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How to 'Dress Up to Sell Up' Spelled Out by Marketing Expert at U. of Illinois

TOO MANY contractors and dealers in the heating, air conditioning, and refrigeration business can be characterized as "all back and no front," it has been said over and over again.

Believing that this situation is a deathly deterrent to sales, several editorials indited on this page during 1957 and 1958 were devoted to the theme:

"Dress Up to Sell Up."

None such has appeared this year, for the simple reason that we ran out of ammunition.

Comes now to the rescue our *Alma Mater*, the University of Illinois.

Its Bureau of Business Management has issued a truly valuable booklet, entitled: *"Low-Cost Store Front Modernization,"* which fills in many empty spaces on the chart of this devoutly-to-be-desired project.

Author John R. Anderson prefaces:

"In retailing, there is no better advertisement than a progressive-looking store front. Modernity has a natural magnetism about it. The American shopper associates himself with the new and the modern, and is drawn to things which reflect these qualities.

"It has been claimed that fully half of the shopping centers' pull is due to newness of appearance."

He continues—

"In working with many smaller-scale retailers as part of our Market Area Development Program, we often have been asked if there were any books written which would be of aid to store-owners who wanted to improve the appearance of their business without investing heavily in complete store redesign.

"Modern textbooks on retailing, we found, generally do not cover this area. Even trade publications, which usually are very helpful in providing merchandising plans for retailers, have not given it much attention.

"This booklet, we hope, will throw some light on the problems and possibilities of low-cost modernization. Suggestions have been made with a limited budget situation in mind."

Author Anderson's useful tome includes nine illustrations which emphasize and dramatize identifiably good and bad characteristics of today's store fronts.

It sells for $1.00 per copy. All orders (cash included) should be sent to the Bureau of Business Management, 15 F.A.C. Annex, University of Illinois, Urbana, Illinois.

Here are some of the chapter titles:

Ideals In Modern Architecture

Ideals In Store Front Design

Some Characteristics of Poor Identification

Improving the Identification

The Costs of Neglect

Putting Colors and Materials to Work

Older Store Fronts' Structural Failings

Some Suggestions with the Shopper In Mind

Elements Which Divert Attention

Gaining Back the Spotlight

Poor Planning, Poor Personality, No Unity

Unity and Personality Applied

University of Illinois Prof. Anderson deserves an accolade. His book should be worth at least a buck, don't you think?

(Please believe us—after you've read it, you'll think it's worth much more.)

Our theme-song continues to be:

Dress Up to Sell Up! It pays!

Mr. Anderson tells you how to put up a better front without going into hock. We recommend it heartily!

The stars are constantly shining, but often we do not see them until dark hours.—EARL RINEY.

When, against one's will, one is high-pressured into making a hurried decision, the best answer is always "NO" because "NO" is more easily changed to "YES" than "YES" is changed to "NO."—CHAS. E. NIELSON, in *Forbes* magazine.

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'The Conscience of the Industry'

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"God grant that not only the love of liberty but a thorough knowledge of the rights of man may pervade all the nations of the earth, so that philosopher may set his foot anywhere on its surface and say: 'This is my country.' "—*Benjamin Franklin.*

OFF THE CHEST

SERVICEMAN HASN'T FOUND WAY TO GET ALONG WITHOUT INSTRUMENTS IN 10 YEARS

Lighthouse Electric Service
Port Isabel, Texas

Editor:

I read with interest your article on page 14 of A.C.H.&R. NEWS issue of July 27. Is my two cents worth of interest?

I have been an electrician for more than 40 years, and never found a way to do without instruments. About 20 years ago I got into refrigeration, and instruments became more essential than ever before.

What kind of service men have been available to B.T. that he has become allergic to instruments? His own background would seem somewhat questionable, in view of his attitude. And for his "hammer and screwdriver" mechanic, I ask you fairly—and all of the others who are engaged in the service industry on fairly recent equipmen—what can he service except perhaps a stubborn access panel, or a sticking main switch cover?

I'm for instruments, the more the merrier—but *only* in the hands of those who have been trained in their proper use and interpretation. This lets out the "jacklegs" of the hammer and screwdriver type, who by any standard are responsible for any retrogression of the service industries.

D. L. HANEY

Handy Way to Subscribe

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What's New

2 Ice Makers Feature New Design Principle

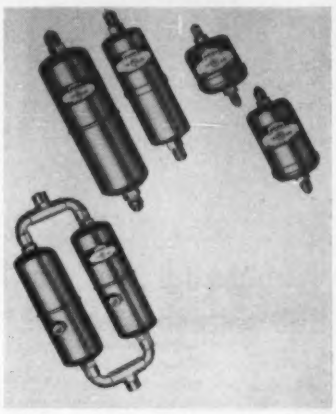
● Two new "Crystal Tips" automatic flaked ice makers are being manufactured by American Automatic Ice Machine Co., Dept. AH&RN, 1501 Park Ave., Faribault, Minn.

The units are called Crystal Tips "Bits" ice makers and are made in two capacities. Model A-12 will make, deliver, and store up to 120 lbs. of flaked ice a day, the company said. The other model, A-36, will produce up to 360 lbs. per day. Standard with each model is a 170-lb. stainless steel lined bin for ice storage.

Of special interest, it was stated, is the new Crystal Tips Ice-Cycle design principle featuring "one of the simplest but most dependable ice making principles ever presented to the ice user. It is quick, quiet, and reliable. It produces a firm, thin ice 'Bit' that cools rapidly but lasts longer."

The new units are "comparatively low in initial cost, installation cost, and operating cost."

Model 410 'Trap-Dri' Now Available



● "Maximum protection" of refrigeration systems against acids, moisture, and dirt is said to be offered in the A-P model 410 "Trap-Dri" now available from the Heating & Air Conditioning Controls Div. of Controls Co. of America, Dept. AH&RN, 2450 N. 32nd St., Milwaukee.

A combined strainer, filter, and drier, the Trap-Dri features a balanced blend of PA 400 silica gel and molecular sieve desiccants that adsorbs water and acid with no release of any substance to the refrigerant circuit, the division said, adding:

"Of particular importance is the fact that the chemical blend protects refrigerants from harmful moisture that causes freezeups, corrosion, and copper plating."

The Trap-Dri is offered with solder or flare type connections, ⅓ to 7½-ton capacities. Also available are an economy model drier, the 414 "Jet-Dri," that removes water and prevents formation of acids, and the 408 "Trap-It" filter, which features a large filtering and absorbing area, it was indicated.

More details on the products described on this page may be obtained by writing the manufacturer at the address given in each story.

Stethoscope Detects Motor Trouble, Leaks

● Disgnosing faults in machines and pipe lines is among uses for a new industrial stethoscope offered by Edmund Scientific Co., Dept. AH&RN, Barrington, N. J.

With this instrument, mechanics and production workers can detect sounds that would otherwise be inaudible, the company claims. The stethoscope is recommended for tuning up motors and compressors, checking running machinery, detecting and diagnosing mechanical flaws — loose joints, poor bearings and valves, strains, leakage of gas, air, or fluid—and many other jobs in maintenance and operating departments.

Price is $2.95 postpaid.

Offers Tools To Fasten Temp. Control Systems

● Two new hammer-in fastening tools have been developed for the installation of temperature control systems, it was announced by Ramset Fastening System, Dept. AH&RN, 12117 Berea Rd., Cleveland 11.

One, "Shure-Set R-300," sets both ¼ in. fasteners and 8/32 studs. The other, Shure-Set R-350, sets 8/32 threaded studs only.

Craftsmen, using the new tools, can easily fasten temperature control components to concrete, masonry, and light-gauge steel in three or four strikes of a hammer without drilling, filling, or plugging, according to the company.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

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8-31-59

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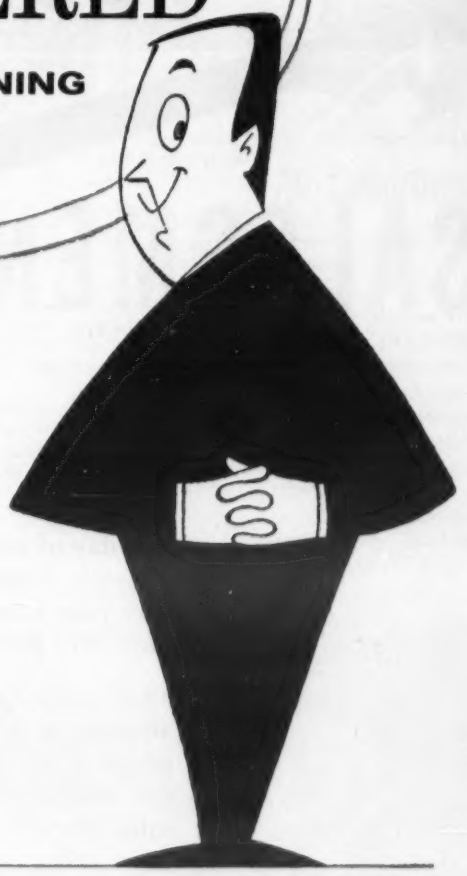
AIR CONDITIONING
(Do You?)



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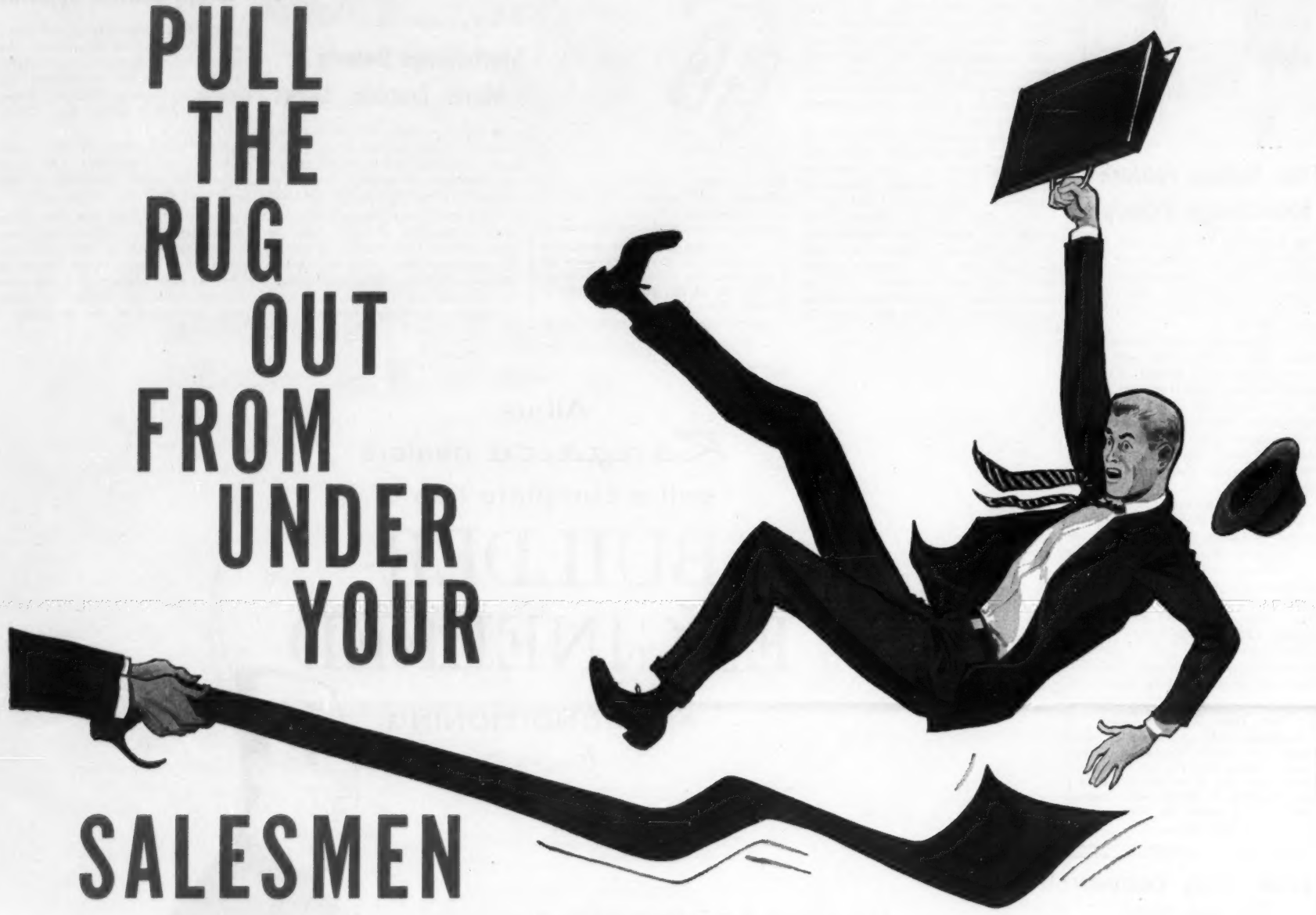
Rangaire

Builder-Research in Action!

Cobell Industries Inc., Cleburne, Texas, Dept. N1

HOW TO PULL THE RUG OUT FROM UNDER YOUR SALESMEN



The day of *salesmanship* is here—and no one knows it better than your competitor! That's why your salesmen need every bit of backing they can get.

That's why failing to advertise *regularly* can amount to pulling the rug right out from under your salesmen, leaving them without the competitive advantage of having their sales story seen *repeatedly* by the men they must sell.

Every call your salesmen make is more important than ever. You can help make each call more effective by pre-selling prospective customers through industry-wide advertising in AIR CONDITIONING, HEATING & REFRIGERATION NEWS, the Weekly Newspaper of the Industry.

Use NEWS advertising regularly and consistently for maximum help to your salesmen.

AIR CONDITIONING
HEATING & REFRIGERATION

The Newspaper of the Industry

RESIDENTIAL — COMMERCIAL — INDUSTRIAL

NEWS

The leading air conditioning publication with highest paid circulation in the field.

450 WEST FORT STREET
DETROIT 26, MICHIGAN

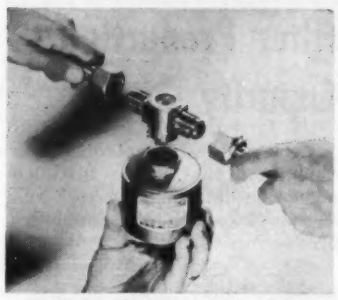
NEW YORK, 521 FIFTH AVE.,
MURRAY HILL 2-1928-9, ROBERT M. PRICE

CHICAGO, 134 S. LA SALLE ST.,
FRANKLIN 2-8093, REX SMITH.

LOS ANGELES, 4710 CRENSHAW BLVD.,
AXMINSTER 2-9501, JUSTIN HANNON.

DETROIT, 450 W. FORT ST.,
WOODWARD 2-0934, AL SCHILDHAMMER.

Bows Adapter Type Filter-Drier, Adapter Fitting



● New adapter type molecular sieve filter-driers and moisture-liquid indicator adapter fittings have been developed by Remco, Inc., Dept. AH&RN, Zelienople, Pa.

"When combined in use, the new units answer the needs of air conditioning and refrigeration system installers who prefer filter-driers that can be replaced easily without disturbing line connections," the company stated.

"The moisture-liquid indicator adapter fitting is installed permanently in the refrigerant line, while the adapter type filter-drier can be quickly installed and replaced by screwing onto the bottom of the special adapter fitting. Both units are approved by Underwriters' Laboratories for 2,500 p.s.i. minimum bursting pressure."

Remco's new adapter fittings are available for line sizes ¼ in. through ⅝ in. with male by male flare, or extended sweat connections. The adapter type filter-driers are available in capacities of 1 through 12 tons for use with Refrigerants 12 or 22 with pressure drop of 2 p.s.i. maximum.

In-Wall Oil Furnace Has New Electric Pilot

● A new "Duo-Therm" 60,000 B.t.u. output 335A "In-the-Wall" oil furnace featuring an automatic electric pilot has been announced by Motor Wheel Corp., Dept. AH&RN, Lansing 3, Mich.

"The electric pilot is a resistance element in the burner that is always red hot," the company explained. "When the thermostat calls for heat, oil flow to the burner starts and the pilot ignites the fuel. When no heat is wanted, oil flow is cut off entirely."

This means that the 335A furnace saves fuel costs, it was pointed out.

The furnace "is designed for easy, in-the-wall installation anywhere in the home," the company said.

More details on the products described on these pages may be obtained by writing the manufacturer at the address given in each story.

save that compressor!

WITH DERCO TERMINAL SEALS

U.S. PAT. NO. 2,451,701 & ADD. PAT. PEND.

PART NO. T-300B

STOPS TERMINAL LEAKS ON SEALED UNITS INSTANTLY!

Simply screw the Terminal Seal over the terminal post and the leak is sealed permanently. CAN BE DONE IN JUST 3 MINUTES. No special tools are required.

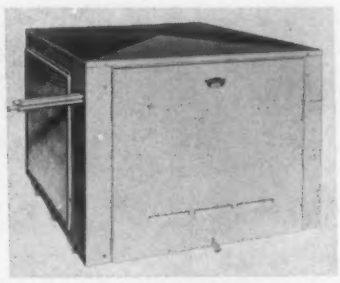
Watsco features their all-new DERCO Seal which has a bakelite body and is short enough to allow the terminal cover to be replaced. Each seal has its own electrical connector. A special nut remover, to remove frozen or rusted nuts from the terminal post is included in each set, at no additional cost. The DERCO seal is designed to fit almost every make unit. Distributed by Watsco, Inc.

For complete information send for catalog #21. Write to Dept. N-38

"ANNOUNCEMENT TO THE TRADE"
Please take notice that infringers of Patent No. 2,451,701, covering our terminal replacement for sealed refrigeration units, will be prosecuted to the fullest extent permitted by law. This announcement is addressed not only to manufacturers of infringing terminal replacements, but also to those who sell, distribute or use them. (Signed) WATSCO, INC.

WATSCO INC. VISIT OUR BOOTH NO. 725 ARI SHOW NOV. 2-5

1020 E. 15th STREET • HIALEAH, FLORIDA



Coast Firm Introduces 5-Ton Condensing Unit

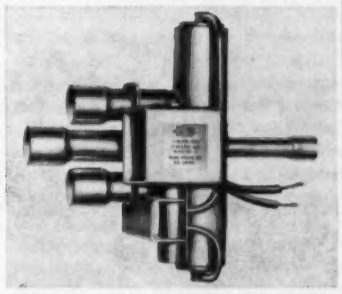
● A new 5-ton air conditioning condensing unit for homes and small commercial concerns has been introduced by Utility Appliance Corp.'s "Gaffers & Sattler" product division, Dept. AH&RN, 8111 W. Beverly Blvd., Los Angeles.

The unit has an increase of 6% in capacity above the firm's former model and will sell at a lower cost, the company indicated.

"Its certified rating, under ARI standard 210-58, is 60,000 B.t.u.h. at 95° ambient," the announcement said. "Featuring a new condensing coil, more efficient internal tubing, and a new heat pump type compressor, the Model G&S 5th. single phase and three phase unit is now available."

Reversing Valve Is Positive Seating, Shifting

● Development of a positive seating and positive shifting 4-way reversing valve has been announced by Alco Valve Co., Dept. AH&RN, 865 Kingsland Ave., St. Louis 5, Mo.



The new 4W Series valves are made of cast iron and steel, the slide being cast iron and the outer shell steel, with no plastics needed for sealing or tight seating, the company indicated.

"Life tests in independent laboratories have exceeded 300,000 cycles without failure to shift or without loss of the tight seating—design of the valve is such that it will shift while the system is in operation with a 300 p.s.i. differential," it was stated. "The rapid shifting of the 4W Series shortens changeover time, and this shortens the defrost cycle.

"The shifting of this valve is independent of any pressure drops in the valve, and assures positive shifting under any combination of operating conditions. The valve also contains a carefully balanced dashpot action to prevent mechanical hammering during shifting."

The valve may be mounted in any position except with the pilot valve upside-down, and it can be installed to shift to cooling or to heating on power failure for the "fail safe" position, the company said.

Heaters Standardized On 24-Volt Controls

● Addition of a 30,000 B.t.u. gas-fired unit heater and standardization on 24-volt thermostat controls for the entire line, which is now available in nine sizes, was announced by Carrier Corp., Dept. AH&RN, Syracuse 1, N. Y.

The new small size is recommended for small stores, offices, classrooms, and for residences where additional heat is needed for playrooms, hobby rooms, and garages.

"The entire line will also have a low voltage transformer for thermostatic control as standard equipment," Carrier stated. "In addition to giving more sensitive control of temperature, it has a quiet diaphragm valve which starts the unit without an annoying 'click.' The Carrier fan does not start until the heat exchanger is warm."

All controls are prewired at the factory. On the small model, an electric pull chain enables the room occupant to turn on the propeller fan for summer air circulation when heating is no longer required.

Synthetic Instrument Oil

● A synthetic instrument oil claimed to offer a significant increase in temperature range and lubricant life over customary petroleum-based lubricants is being marketed by the Industrial Lubricants Div., Lehigh Chemical Co., Dept. AH&RN, Chestertown, Md.

Thin Silhouette Marks Compact Cooling Unit

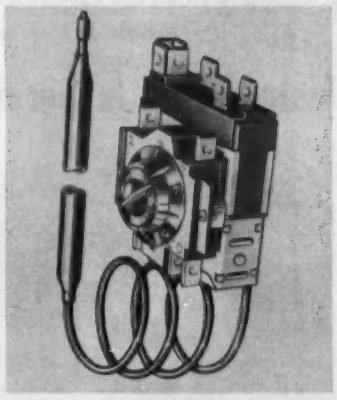
● New, compact "Top-Aire" cooling unit with flat, thin silhouette for use in reach-ins, back bars, and under-counter cabinets is announced by Betz Div., Bohn Aluminum & Brass Corp., Dept. AH&RN, Danville, Ill.

Other features are: drain fitting angled so it can be run through back or bottom of cabinet, space for expansion valve inside unit, knockout in top plus openings in rear for bringing out connections, impedance-protected motors, and grain aluminum cabinets.

Capacities, based on entering air temperatures, are 1,000, 1,300, and 1,700 B.t.u.h. at 10° T.D.

Cycling Thermostats Are for Air Conditioning

● Slim-line design that permits shallow depth mounting, and convenient side access to terminals—for fast, easy servicing, are among announced advantages offered by a pair of new cycling thermostat controls for air conditioning equipment recently introduced by Ranco, Inc., Dept. AH&RN, 601 West Fifth Ave., Columbus 1, Ohio.



Designated the C21 and C22 Series, the controls are designed to operate window or unit air conditioners, compressors, strip heaters, and reverse-cycle heat pumps under cross ambient conditions in a wide variety of applications.

A new "dial - within - a - dial" rotary selector switch is available as an optional feature on both models.

On the manually operated C21 Series Control, the rotary selector switch provides up to four circuits for compressor cooling or strip heating and step operation of compressors or heaters. Rotary switch has dial positions that permit opening of all circuits, or closing one or two circuits simultaneously. Four, six, or eight dial positions are standard, the company said.

The C22 thermostat automaticaly operates heat pumps with reversing valves with or without de-icer controls, two-stage units with stand-by capacity, and dehumidification systems with reheat. It can control two, three, or four different devices. Six terminals are provided on the thermostat and, with the rotary type selector switch, up to four circuits are possible to control various air conditioning applications.

FIND · FIX

Refrigerant* Leaks

FAST

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Refrigeration and Air-Conditioning Outfit

This one handy, compact outfit is all you need to find and fix refrigerant gas leaks. Sensitive leak detector "sniffs" as little as 100 parts of halide refrigerant* in a million parts of air... *in seconds,* pinpoints leaks too small to show up in soapy water. Also included in the outfit are 3 sizes of torch stems for open-flame soldering, heating, and brazing; an adjustable gas pressure regulator; interchangeable torch handle; hose; enameled steel carrying case. Models for use with B or MC PREST-O-LITE acetylene tank.

*ASRE numbers 11, 12, 13, 14, 21, 22, 113, 114

$43.00 COMPLETE

PREST-O-LITE air-acetylene equipment and small tanks are available from your local supplier of LINDE products. See him today. Or write for further information to: Dept. 624, LINDE COMPANY, Division of Union Carbide Corporation, 30 East 42nd St., New York 17, N. Y.

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TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

Instruments In Service Work (11)

Recording Instruments

On chronically troublesome jobs—where repeated calls have failed to solve the real problem—a recording instrument is sometimes the answer. A 24-hour record of box temperature, or suction pressure, of humidity can often indicate just what the difficulty may be by showing when and how many times a day some specific change takes place.

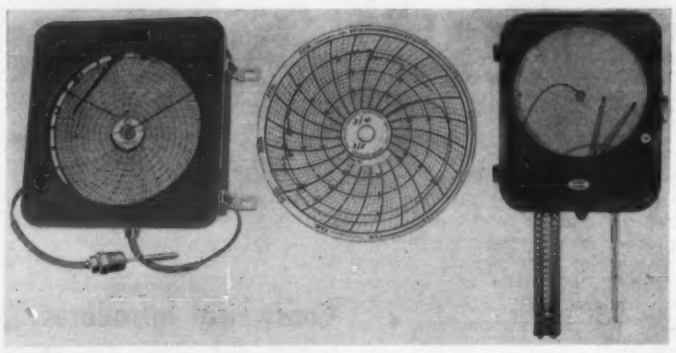
Some recording instruments are designed for a specific purpose; that is, they measure and record temperature or pressure, or humidity, or some combination of these. Others are essentially electronic instruments which can be used interchangeably to receive electrical impulses generated by any variable and to record them continuously.

The time will come when all progressive service shops will have one or more recorders of various types, and the need has already been recognized by Refrigeration Service Engineers Society which has issued a long bulletin on the use and need of recorders in refrigeration service work.

Typical Suppliers: (3), (5), (7), (9), (12), (18), (19), (22), (23), (27), (31), (37).

* * *

This series has briefly touched upon many instruments which are being used or can be used in heating-cooling service work, either in the shop or in the field. As mentioned earlier, knowledge of the existence of a specific instrument may sometimes be as important as possession of a more frequently used one, since the knowledge may make possible solution of an otherwise unsolvable problem.



ASSORTMENT OF recording instruments for service, shop, and laboratory work appear in the pictures above and at left.

It seems inevitable that the service organizations which stay in business and make a profit will be those with the over-all attitude which makes the purchase of modern instruments seem a natural and desirable thing, rather than an unpleasant expenditure to be avoided at all costs.

Instrument Suppliers

Here is the complete list of companies whose instruments were referred to in this series. The reference numbers preceding the company name are those used in the text.

1. Anemostat Corp. of America, 10 E. 39th St., New York 16, N. Y.
2. Associated Research, Inc., 3758 W. Belmont Ave., Chicago 18, Ill.
3. Bacharach Industrial Instruments Co., 200 N. Braddock Ave., Pittsburgh 8, Pa.
4. Bailey Meter, 1050 Ivanhoe Rd., Cleveland 10, Ohio.
5. Barber-Colman Co., 1700 Rock St., Rockford, Ill.
6. B-I-F Industries, Inc., 345 Harris Ave., Providence 1, R. I.
7. Bristol Co., P.O. Box 1790 ACR, Waterbury 20, Conn.
8. F. W. Dwyer, P.O. Box 373, Michigan City, Ind.
9. Electric Auto-Lite Co., P.O. Box 931, Toledo 1, Ohio.
10. Ellison Draft Gage Co., Inc., 548 W. Monroe St., Chicago 6, Ill.
11. Fisher Research Laboratory, Inc., 1961 University Ave., Palo Alto, Calif.
12. Friez Instrument Div., 1400 Taylor Ave., Towson 4, Md.
13. General Electric Co., Apparatus Sales Div., 1 River Rd., Schenectady 5, N. Y.
14. Hastings - Raydist, Newcomb Ave., Hampton, Va.
15. Heights Air Conditioning Co., 3607 Hildana Rd., Cleveland 20, Ohio.
16. Imperial Brass Mfg. Co., 6300 W. Howard St., Chicago 48, Ill.
17. Industrial Development Laboratories, 982 River Rd., Edgewater, N. J.
18. Leeds & Northrup Co., 4907 Stenton Ave., Philadelphia 44, Pa.
19. Manning, Maxwell, Moore (American), 250 E. Main St., Stratford, Conn.
20. Marsh Instruments Co., 3501 Howard St., Skokie, Ill.
21. Meriam Instrument Co., 10920 Madison Ave., Cleveland 2, Ohio.
22. Minneapolis-Honeywell Regulator Co., Industrial Div., 2753 Fourth Ave., S., Minneapolis 8, Minn.
23. Moeller Instrument Co., 132nd St. & 89th Ave., Richmond Hill 18, N. Y.
24. Pacific Transducer Corp., 11836 W. Pico Blvd., Los Angeles 64, Calif.
25. Palmer Thermometers, Inc., 2501 Norwood Ave., Box 125, Cincinnati 12, Ohio.
26. Parks-Cramer Co., Newport St., Fitchburg, Mass.
27. Partlow Corp., 2 Champion Rd., New Hartford, N. Y.
28. Powers Regulator Co., 3400 Oakton St., Skokie 78, Ill.
29. Pyramid Instrument Corp., 630 Merrick Rd., Lynbrook, N. Y.
30. Rochester Mfg. Co., 100 Rockwood St., Rochester 10, N. Y.
31. Serdex, Inc., 12 Bowdoin Sq., Boston 14, Mass.
32. Simpson Electric Co., 5200 W. Kinzie St., Chicago 44, Ill.
33. Tittie & Kift, 1823 N. Monitor, Chicago 39, Ill.
34. United States Gauge Div., American Machine & Metals, Inc., Sellersville, Pa.
35. Victory Engineering Corp., 500 Springfield Rd., Union, N. J.
36. Wallace & Tiernan, 25 Main St., Belleville 9, N. J.
37. Weksler Instruments Corp., 195 E. Merrick Rd., Freeport, L. I., N. Y.

Permatron Doubles Filter Production Capacity

CHICAGO—Permatron Corp. announced that it has installed new special machinery and equipment which will double its production capacity.

Special sizes of "Permatron Lifetime" electrostatic air filters which formerly were shipped within five days, can now be made available even quicker, reports the company, which began shipping Permatron filters about 18 months ago.

The company has two lines of filters for use in domestic and industrial installations. It said complete distribution facilities have been arranged throughout the United States and Canada, and outlets have been established in many foreign countries through its export department. It produces three complete frame widths, including the only full 2-in. filter without clips.

G-E To Build Service Parts Warehouse

LOUISVILLE, Ky. — A new warehouse to distribute service parts and literature for the General Electric Major Appliance Div. will be built next year near New Concord, Ohio.

John H. Miller, product service manager in the division's Sales and Distribution Dept., said plans for the facility call for 400,000 sq. ft. of storage and service area and an office building of 25,000 sq. ft. He estimated total cost, including land, building, and equipment, at more than $3,000,000. The new warehouse will take the place of several buildings in the Zanesville, Ohio area, Miller said.

Three Mfrs. Field Testing All-Aluminum Cooling Coils

PITTSBURGH — Aluminum Co. of America has announced that three major manufacturers currently are field testing more than 3,000 air conditioners equipped with all-aluminum coils.

The company declared that aluminum alloys and design techniques now are available "to meet virtually all operating conditions."

"All-aluminum coils first were tried in the early 1950's, on the recommendation of metal suppliers other than Alcoa," it was pointed out.

"However, alloys and design techniques then available proved inadequate for corrosive conditions experienced in some environments, and air conditioner makers shelved the aluminum coil idea.

"Two engineering developments set the stage for aluminum's re-entry into air conditioner coils," the company said.

"Controlled service tests of various aluminum designs in evaporator and wet condenser coils—made in three environments more corrosive than those encountered in normal service—have shown that properly designed aluminum coils will perform well.

"The second development was the perfection of a zinc soldering process for successfully joining aluminum to itself, or to other metals.

"In the unsuccessful earlier commercial venture with aluminum coils, it was discovered that copper components had been located in proximity to aluminum parts.

"Sample condenser from these units provided confirming evidence that corrosion of aluminum had been accelerated by electrolytic action between the two dissimilar metals.

"With this knowledge, Alcoa engineers redesigned several air conditioners to achieve a minimum of copper components. Aluminum was substituted for copper wherever possible. Where copper and aluminum required joining, the zinc soldering process, utilizing specially developed Alcoa joining products, was employed.

"Air conditioners of different designs then were tested for two years at three widely separated U. S. locations.

"The tests not only demonstrated that aluminum can be used successfully for coils, but also emphasized the desirability of aluminum in the construction of other air conditioner components.

"The most effective designs incorporated either the more corrosion - resistant "Alclad" alloy tube, or protection of the tube by anodic aluminum-alloy fins and suitable paint coatings."

Dryomatic

SOLID DESICCANT DEHUMIDIFIERS

• Low humidity without reheat • Economical operation
• Low dew point at any temperature • Easy installation

Dryomatic provides you with a complete line of automatic, adsorption type air dryers which solve your customers' humidity control problems in candy plants, drug processing, warehouses, laboratories, dry rooms, paper storage, and other locations where extremely low dew points have to be precisely maintained.

Write for free brochure and specification sheets on all Dryomatic models.

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DOES YOUR APPLIANCE CARRY THIS Seal of Quality?

The motor used in this equipment is protected against overloads, low voltage, over-voltage with a Mighty Mite Thermal Protector

MECHANICAL INDUSTRIES PRODUCTION CO.
223 Ash Street • Akron, Ohio

Fundamentals of Air-Moving Systems

(3) How Housings Affect Blower Wheel Performance

By L. C. Lindstrom, Air Impeller Div.
The Torrington Mfg. Co., Torrington, Conn.

EDITOR'S NOTE: This is the third and final instalment of Part 3 of Fundamentals of Air-Moving Systems. The first two instalments appeared in the Aug. 17 and 24 issues. Further discussions of Fundamentals of Air-Moving Systems will appear in future issues of the NEWS.

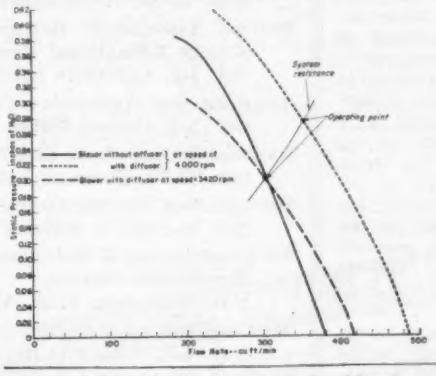


FIGURE 11

VARYING HOUSING OUTLET

Either because of the original design of the blower wheel and housing or because there is not enough space available in a particular application, there may not be sufficient pressure conversion in the wheel blades and scroll before the air reaches the housing outlet. In such cases it may be desirable to reduce even further the air velocity at the outlet in order to achieve higher static pressure.

If possible, an effective method for providing further pressure conversion is to add a diffuser to the housing outlet to provide a gradual increase in the cross-sectional area of air flow.

A diffuser may be round in shape or, as is usually the case, may have a square or rectangular cross-section which continues the contour of the housing outlet (as in Fig. 10). Round or square diffuser cross sections (unlike Fig. 10) are often more satisfactory than rectangular cross-sections because the velocity distribution is more uniform.

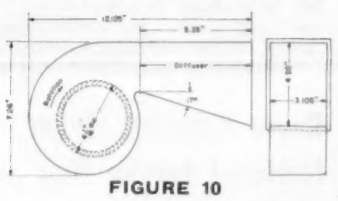


FIGURE 10

There are two types of power losses that occur during pressure conversion in an outlet diffuser:

1. *Flow separation*—the velocity of the air stream varies widely from point to point in its cross-section and air turbulence develops.

2. *Friction losses* — proportional to the length of the diffuser and roughness of its internal surfaces.

Flow separation is minimized by making the diffuser as long as possible and the diffuser angle as small as allowable (diffuser angle = 17° in Fig. 10). Friction loss, of course, can be reduced by making the inside surfaces of the diffuser as smooth as possible and by making the diffuser as short as it can be without causing flow separation.

The pressure-flow curves in Fig. 11 represent operation of the blower wheel and housing in Fig. 10 both with and without the diffuser. The two curves at a speed of 4,000 r.p.m. show the significant improvement in blower wheel performance with the diffuser. Because of the blower wheel's higher static efficiency, the increased pressure and flow rate at the new operating point on the indicated system-resistance curve are obtained at virtually the same brake horsepower.

If it were desirable to reduce the motor speed (in order to lower the sound level in the unit, for example) it can be seen in Fig. 11 that the speed with a diffuser can be cut to 3,420 r.p.m. to achieve about the same pressure and flow at the point as the blower wheel provides at a speed of 4,000 r.p.m. without the diffuser. Because the lower speed has also dropped the brake horsepower curve, the addition of the diffuser has reduced the power required at the operating point from about 0.22 to 0.16 hp.

Cleveland Firm Producing New Line of Hermetic Compressors for Special Use

CLEVELAND—A new line of hermetic compressors for special applications, such as in electronic equipment cooling systems, is now being produced by Great Lakes Mfg. Corp. here.

This company, with headquarters at 4223 Monticello Blvd., has been producing special air pumps, pressurization assemblies, and regulators for aircraft and missiles.

The compressors are powered by 3-phase 400 C.P.S. motors. Design features include light weight and small size, and the ability to operate in any position because of the oil-mist lubricating system.

No oil sump as such is provided in the compressor. The refrigerant and oil mixture is predetermined on the basis of the system in which it is used.

Each compressor is designed and tailored to the specific operating conditions, and thus a flexible basic design is desirable, states Tom G. Crider, veteran industry compressor design engineer who is staff engineer for Great Lakes.

The refrigerant, displacement, and motor size are chosen based on the operating capacity and conditions required, he says, and the compressor is supplied in single and two-stage design.

Refrigerants-11, 12, and 114 may be used depending on the application. Refrigerant-22 may be used under certain conditions, and a design for Refrigerant-21 is under development.

As explained by Crider, there are certain applications in electronic equipment, aircraft, missiles, and in water chilling where the main refrigerating system compressor requirements are minimum physical size and weight, non-position sensitive, and life expectancy up to 5,000 hours at high ambient temperatures and high compression ratios. In such applications the systems designed by Great Lakes find a place.

'Real Cool' Service

TULSA, Okla.—An air conditioned lounge equipped with TV was planned for a new service station to be opened here.

Educator Cites Role Of Air Conditioning In School of Future

MANHATTAN, Kan. — Schools of the future must have flexibility in the control of their physical environment if maximum educational efficiency of the building is realized.

"And air conditioning is an important part of this picture," Dr. James D. MacConnell, director of the Stanford University School of Planning Laboratory, emphasized in addressing the dinner meeting for Kansas State university's recent two-day conference on air conditioning and heating of school buildings.

The Stanford university educator sees the time coming when the entire interior of a building can be changed to meet curriculum needs, and he emphasized that money is saved in school building construction through planning, rather than poor or "cheap" construction.

He cited an instance where master planning saved the Clark county school district at Las Vegas, Nev. enough money to pay for constructing two elementary schools and a junior high school in a period of five years.

Dr. MacConnell also stressed the importance of site planning. In a period of rising land values, with a trend from rural to urban living, a school district may save the cost of its school building merely by anticipating its needs and acquiring sites before land values go up.

Trends now include larger classrooms, a decrease in window areas to help give better indoor climate control (which indicates need for indoor planted areas), better sound conditions, and more compact construction. Where possible, gymnasiums or physical education areas will be roofed only.

A Minneapolis engineer, Zephyrin A. Marsh of Minneapolis-Honeywell Regulator Co., stressed the efficiency aspects of air conditioning. He cited studies which indicated a 20% efficiency increase in offices and factories where air conditioning was added.

Even in an area as far north as Minneapolis, mechanical cooling is needed a fourth of the time during the school year if maximum comfort is achieved, he declared.

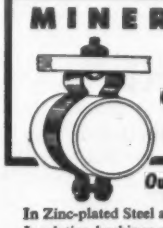
Marsh said that adding air conditioning to a school building would increase the cost 1 to 3% on the average, but he pointed out that there were cases where air conditioning of a new building actually had lowered the building cost.

K-State's annual air conditioning and heating conference this summer was devoted to the methods and economics of air conditioning for school buildings. Around 100 school administrator, school board members, contractors, engineers, and archtects attended.

The conference was sponsored by the K-State departments of mechanical engineering and continuing education, and the Wichita and Kansas City chapters of the American Society of Heating, Refrigeration & Air-Conditioning Engineers.

DRAYER-HANSON's chief engineer A. J. Mallinckrodt takes sound readings on giant air-cooled condenser, prior to shipment to Cambria (Calif.) Weather Station, the fourth such facility in the West to gear-up with year-round air conditioning. This 70-ton unit and a matching model are part of system calling for other D-H single-zoned air conditioning equipment.

MINERALLAC



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Refrigeration Problems
And Their Solution
(As Written by Paul Reed)

Cold Weather Problems (5)

In the previous instalment we discussed what happens when an air-cooled condensing unit is located in a basement at 40° and the cooler, held at about 38°, is located in the store above that is kept at comfortable temperatures of around 70° to 75°.

With such a cool location, we found that the head pressure would be very low and that short cycling and expansion valve trouble were likely, and that it might be difficult to maintain desirable temperature and humidity conditions in the refrigerator.

BASEMENT AT 30°

Now, suppose that the basement temperature drops to 30° or lower. First, of course, the head pressure will drop even lower than it was at 40°. With a 30° basement, the head pressure, while the unit is running, is about 60 to 70 p.s.i.g. This will increase the likelihood of expansion valve trouble, for the pressure drop across the valve is even less—probably only 30 or 40 p.s.i.g., consequently reducing the capacity of the valve.

The lower head pressure will also increase the capacity of the condensing unit, thus increasing the tendency toward short-cycling and making it even more difficult to maintain proper temperature and humidity conditions in the cooler.

But with the basement at 30°, the difficulties are not just a little greater than at 40°; they are a great deal worse. It will be difficult to get the unit to operate at all, and if we do, the compressor is apt to be damaged.

A NORMAL DEFROST CYCLE

The following outlines the temperatures of the coil during a normal off cycle of the blower coil, with the condensing unit controlled by a low pressure control set to cut in at 37 p.s.i.g. and cut out at 22 p.s.i.g. to give a self-defrosting cycle.

In our example, the store is at 70° to 75° and the cooler is at 38°, so heat leaks through the walls of the cooler, and more heat enters the cooler as the door is occasionally opened. The air in the cooler is circulated by the blower fan and carries the heat to the blower coil.

During the previous run, the coil temperature averaged about 25°, but by the end of the run it was down to 22° and the suction pressure was down to 22 p.s.i.g. at which the low pressure control was set to cut out and stop the compressor.

As the 38° air is blown over the coil, the coil gradually warms up and the frost that accumulated on the coil during the running cycle gradually melts off. As the coil temperature rises, the pressure within the coil also rises.

The coil does not stay at the same temperature throughout the coil, however. Liquid refrigerant and oil left in the coil at the end of the run tend to gather in the lower passes of the coil, leaving only gaseous refrigerant in the top passes of the coil.

TOP PASSES WARM RAPIDLY

Therefore, these top passes of the coil warm up more rapidly than the rest of the coil, for the liquid refrigerant and oil have more heat capacity and thus warm up more slowly. The frost starts to melt on the top passes first. Some of the water is vaporized and carried away by the air, but some of it runs down on the lower part of the coil, which may still be below 32°, so the water refreezes into ice, and thus further slows up the defrosting of the lower portion of the coil.

Inside the coil, the gas in the top coils is warmed, but it cannot rise to a pressure above the saturation pressure corresponding to the temperature of the warmest liquid in the coil. The pressure in the coil—and consequently the suction pressure when the compressor is not running — depends upon the temperature of the warmest *liquid* refrigerant.

COIL NOT ALL AT SAME TEMPERATURE

The liquid in the coil is not all at the same temperature. That in the upper part may be several degrees warmer than that in the bottom coils. If the pressure control were to be set to cut in at 31 p.s.i.g. corresponding to 33°, this would mean that the machine would start when the liquid in upper passes had warmed up to 33°. Consequently, the frost would be melted off these upper passes.

The liquid in the lowest part of the coil might still be no warmer than 28°, so the frost would still not be melted off the bottom passes. Nevertheless, the suction pressure depends on the *warmest* liquid, so the pressure control must be set at, say, 37 p.s.i.g. corresponding to a saturation temperature of 40°.

Thus, the warmest liquid in the coil has warmed up to 40° before the coldest liquid at the bottom has warmed up to 33°, which it must if the frost and ice are to melt off the bottom part of the coil as well as the upper passes before the machine starts.

WARMEST LIQUID DETERMINES CUT-IN SETTING

This is essential on the "self-defrosting" cycle. Otherwise during each run, the frost and ice would build up on the lowest, coldest coils. So we must set the pressure control to cut in at a high enough pressure to allow *all* of the coil, the coldest passes at the bottom, as well as the warmer passes at the top, to warm up above 32° before the machine is allowed to start its next running cycle.

The above normal temperatures and pressures during the off cycle assume that the other parts of the low pressure portion of the system —the suction line and the compressor—are at a temperature of 40° or more.

CUT-IN SETTINGS FOR 35° AND 30° BASEMENTS

If the suction line and compressor are at 35°, then the pressure control could not be set to cut out at a pressure higher than about 32½ p.s.i.g. corresponding to 35°. As soon as the pressure in the blower coil started to rise above 32½ p.s.i.g., this vapor at 35° would pass down through the suction line and condense in the 35° suction line and compressor.

The pressure in the blower coil just could not rise above 32½ p.s.i.g., so the warmest liquid in the coil could not rise above 35°. But the coldest part of the liquid might still be down to 27° or 28°, and the frost on the lower coils containing the 27° or 28° liquid would not have melted off yet.

In a 35° basement, it would be very difficult if not impossible to operate on a self-defrosting cycle using a low pressure control. To get the machine to run, the low pressure control would have to be set to cut in at 32½ p.s.i.g., corresponding to 35°, and the colder part of the coil would not have defrosted yet.

If the low pressure control were set to cut in at 37 p.s.i.g. corresponding to 40°, with the machine in a 35° basement, the suction pressure just would never get up to 37 p.s.i.g. and the machine would never start, regardless of how warm the blower coil became. The refrigerant, as it warmed above 35°, would simply vaporize and condense into the compressor and cold suction line in the basement.

With a 30° basement, the situation would be even worse, for the pressure corresponding to 30° saturation is 28½ p.s.i.g., so the suction pressure would never get above 28½ p.s.i.g. It is obvious that a cut-in setting of the low pressure control of 28½ p.s.i.g. would not permit a self-defrosting cycle.

SELF-DEFROSTING IF BASEMENT IS BELOW 40°

We see, therefore, that it is difficult to operate commercial fixtures on a defrosting cycle, if the machine is located in a place where the temperature is less than 40°, and we may run into operating troubles if the machine location is 40° to 50°.

We have mentioned that if the suction line and compressor are colder than the evaporator, refrigerant vaporized in the evaporator passes through the suction line and condenses into the compressor and the portion of the suction line that is in the cold machine room. We have referred to this only in respect to its effect on the setting of the low pressure control, on the defrosting of the evaporator and on the temperature and humidity in the cooler.

In addition, this condensed refrigerant in the compressor has a very damaging effect on the compressor. This will be discussed in another instalment. Also, methods will be outlined by which some of the difficulties previously discussed can be partially overcome.

(To Be Continued)

WHAT . . WHEN . . WHERE
—A Guide to Coming Events of Interest

National Institute of Locker & Freezer Provisioners Convention
Sept. 13-16, Netherland-Hilton hotel, Cincinnati.

Refrigeration & Air Conditioning Contractors Association Convention
Sept. 27-30, Ambassador hotel, Los Angeles.

Midwest Association—Refrigeration Service Engineers Society Educational Conference
Oct. 1-3, Lafayette hotel, Little Rock, Ark.

American Gas Association Convention
Oct. 5-7, Conrad Hilton hotel, Chicago.

National Frozen Food Distributors Association Meeting
Oct. 25-28, Sherman hotel, Chicago.

Refrigeration Service Engineers Society Convention
Oct. 30-Nov. 2, Atlantic City, N. J.

Air-Conditioning & Refrigeration Institute Membership Meeting
Nov. 1, Haddon Hall, Atlantic City, N. J.

Air-Conditioning & Refrigeration Wholesalers Meeting
Nov. 1-2, Atlantic City, N. J.

National Commercial Refrigerator Sales Association Convention
Nov. 2-4, Traymore hotel, Atlantic City, N. J.

11th Exposition of the Air-Conditioning & Refrigeration Industry
Nov. 2-5, Convention Hall, Atlantic City, N. J.

National Hotel Exposition
Nov. 2-6, Coliseum, New York City.

National Electrical Manufacturers Association Meeting
Nov. 9-13, Traymore hotel, Atlantic City, N. J.

The Institute of Boiler & Radiator Manufacturers Meeting
Week of Nov. 9, Seaview Country Club, Absecon, N. J.

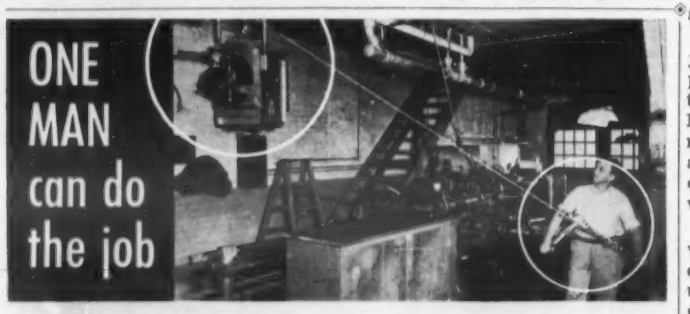
National Warm Air Heating & Air Conditioning Association Meeting and Convention
Dec. 1-4, Chase Park-Plaza hotel, St. Louis.

Revco Appoints Unger National Service Mgr.

DEERFIELD, Mich.—John E. Unger has been appointed national service manager of Revco, Inc., according to J. H. Overmyer, vice president, director of marketing.

J. E. Unger

Unger replaces Paul Ashburn, who had previously resigned. Prior to joining Revco, Unger held the post of eastern regional service manager for Amana.



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Room Air Conditioner Tax--

(Concluded from Page 1, Col. 3)

the exemptions previously granted on sizes over certain capacities.

For room air conditioners, all reference to definition by size is eliminated, and there is no "upper limit" in B.t.u. capacity by which a room air conditioner can be defined. (It had been predicted that this would be set at a 25,000 B.t.u. rating.)

The proposed regulation describes air conditioners subject to tax as follows:

(c) **Self-contained air conditioning units.** The term "self-contained air conditioning units" includes a factory-made encased assembly or one sold for assembly on installation which—

(1) Is designed for the direct delivery of conditioned air and for the removal of heat.

(2) Incorporates means for cooling, dehumidifying, and circulating the air of a room or other enclosure, and

(3) Is designed for use as a portable unit, console unit, or for installation in or in front of a window or other opening.

An assembly which meets the conditions in subparagraphs (1), (2), and (3) of this paragraph, and which also includes means for ventilating, heating, or performing other functions, constitues a "self-contained air conditioning unit" in its entirety or in part, depending on the facts in each case. However, the term "self-contained air conditioning units" does not include any unit which requires the use of a water-cooled system for the discharge of removed heat.

Likewise the term does not include units which are primarily designed for use in connection with motor vehicles and which are taxable as automobile parts or accessories under section 4061 (b) and the regulations thereunder contained in Subpart H of this part.

In the imposition of the 5% tax on household refrigerators, the regulation disregards previous rulings which had limited household units to all models 14 cu. ft. and under (see text).

On home freezers, all reference is deleted to the description of home freezers as those with under 25 cu. ft. capacity (see text).

So far as "interpreting" the proposed regulation is concerned, the "quick guesses" are these:

Heat pump type room air conditioners will be fully taxed. Strip heaters in room units will be taxed at a 5% rate.

It is the obvious intent of the internal revenue officials to tax only room air conditioners. However, the burden may be on individual manufacturers to prove that the air-cooled unitary air conditioners which they produce are not "room air conditioners."

Likewise, manufacturers of food freezers for commercial applications may have to prove that their units are especially designed for commercial and not household use.

The regulation also affects the 5% tax on desk, pedestal, and bracket type electric fans and air circulators. Presently, such items with fan blades larger than 16 in. are not taxable, but this provision is eliminated, as is the one which limited the tax on electric belt-driven fans to those with blade diameters of less than 40 in.

Text

Subpart I—Refrigeration Equipment, Electric, Gas, and Oil Appliances, and Electric Light Bulbs

Refrigeration Equipment

§ 48.4111 Statutory provisions; imposition of tax.

Sec. 4111. **Imposition of tax.** There is hereby imposed upon the sale of the following articles (including in each case parts or accessories therefor sold on or in connection with the sale thereof) by the manufacturer, producer, or importer a tax equivalent to the specified percent of the price for which so sold:

Articles taxable at 5 Percent—

Household type refrigerators (for single or multiple cabinet installations) having, or being primarily designed for use with, a mechanical refrigerating unit operated by electricity, gas, kerosene, or gasoline.

Household type units for the quick freezing or frozen storage of foods operated by electricity, gas, kerosene, or gasoline.

Combinations of household type refrigerators and quick-freeze units described above.

Articles Taxable at 10 Percent—

Self-contained air-conditioning units. [Section 4111 as amended and in effect Jan. 1, 1959]

§ 48.4111-1 Imposition of tax.

(a) **In general.** Section 4111 imposes a tax on the sale by the manufacturer, producer, or importer of the following article (including in each case parts or accessories therefor sold on or in connection with the sale thereof):

(1) Household type refrigerators (for single or multiple cabinet installations) having, or being primarily designed for use with, a mechanical refrigerating unit operated by electricty, gas, kerosene, or gasoline;

(2) Household type units for the quick freezing or frozen storage of foods operated by electritcy, gas, kerosene, or gasoline;

(3) Combinations of household type refrigerators and quick-freeze units described in subparagraphs (1) and (2) of this paragraph; and

(4) Self-contained air-conditioning units.

(b) **Rates and computation of tax.** (1) Tax is imposed on the sale of the articles specified in section 4111 and paragraph (a) of this section at the rates specified below:

	Percent
Household type refrigerators, household type quick-freeze units, and combinations of such refrigerators and quick-freeze units	5
Self-contained air-conditioning units	10

(2) Tax is computed by applying the applicable rate to the price for which the article is sold. For the definition of the term "price," see section 4216 and the regulations thereunder contained in Subpart M of this part.

(c) **Liability for tax.** The tax imposed by section 4111 is payable by the manufacturer, producer, or importer making the sale.

§ 48.4111-2 Definitions.

For purposes of the tax imposed by section 4111, unless otherwise expressly indicated:

(a) **Household type refrigerators.** The term "household type refrigerators" includes refrigerators for single or multiple cabinet installations which—

(1) Have an actual, practical, commercial fitness, or are specifically designed and constructed, for household use,

(2) Have, or are primarily designed for use with, a mechanical refrigerating unit operated by electricity, gas, kerosene, or gasoline, and

(3) Are arranged to provide refrigerated storage space for the preservation of food or low temperature space for making ice cubes or frozen desserts.

(b) **Household type units for the quick freezing or frozen storage of foods.** The term "household type units for the quick freezing or frozen storage of foods," includes units solely for the quick freezing of foods or solely for the storage of frozen foods or combinations thereof which—

(1) Have an actual, practical, commercial fitness, or are specifically designed and constructed, for household use, and

(2) Are operated by electritcy, gas, kerosene, or gasoline.

(c) **Self-contained air-conditioning units.** The term "self-contained air-conditioning units" includes a factory-made encased assembly or one sold for assembly on installation which—

(1) Is designed for the direct delivery of conditioned air and for the removal of heat.

(2) Incorporates means for cooling, dehumidifying, and circulating the air of a room or other enclosure, and

(3) Is designed for use as a portable unit, console unit, or for installation in or in front of a window or other opening. An assembly which meets the conditions in subparagraphs (1), (2), and (3) of this paragraph, and which also includes means for ventilating, heating, or performing other functions, constitutes a "self-contained air-conditioning unit" in its entirety or in part, depending on the facts in each case. However, the term "self-contained air-conditioning units" does not include any unit which requires the use of a water-cooled system for the discharge of removed heat. Likewise, the term does not include units which are primarily designed for use in connection with motor vehicles and which are taxable as automobile parts or accessories under section 4061(b) and the regulations thereunder contained in Subpart H of this part.

(d) **Cross references.** For other relevant definitions, see § § 48.0-2 and 48.7701.

§ 48.4111-3 Parts or accessories.

The tax attaches in respect of parts or accessories for articles specified in section 4111 and paragraph (a) of § 48.4111-1 sold on or in connection with the sale thereof at the rate applicable to the sale of the basic articles. The tax attaches whether or not the parts or accessories are billed separately. Moreover, if taxable articles are sold by the manufacturer, producer, or importer thereof without parts or accessories which are considered equipment essential for the operation or appearance of such articles, the sale of such parts or accessories will be considered, in the absence of evidence to the contrary, to have been made in connection with the sale of the basic article even though they are shipped separately at the same time or on a different date. On the other hand, no tax attaches in respect of parts or accessories for articles specified in section 4111 and paragraph (a) of § 48.4111-1 which are sold otherwise than on or in connection with such articles or with the sale thereof.

§ 48.4111-4 Tax-free sales.

For provisions relating to tax-free sales of articles referred to in section 4111, see—

(a) Section 4221, relating to certain tax-free sales;

(b) Section 4222, relating to registration; and

(c) Section 4223, relating to special rules relating to further manufacture; and the regulations thereunder contained in Subpart N of this part.

§ 48.4111-5 Effective date.

The provisions of § § 48.4111-1 through 48.4111-4 are effective as provided in Subpart A of this part except that under the authority of section 7805(b) the provisions of such sections shall not be applicable in respect of sales made by a manufacturer, producer, or importer before the first day of the first calendar month which begins more than 30 days after the date of publication of the regulations in this subpart in the "Federal Register" of the following articles:

(a) "Household type refrigerators," as defined in paragraph (a) of § 48.4111-2, which have a net storage space exceeding 14 cubic feet;

(b) Combinations of "household type refrigerators" and "household type units for the quick freezing or frozen storage of foods," as defined in paragraphs (a) and (b) of § 48.4111-2, which have a net storage space exceeding 14 cubic feet in the normal temperature refrigerator portion.

(c) "Self-contained air-conditioning units," as defined in paragraph (c) of § 48.4111-2, which have a total motor horsepower of 1 or more horsepower, or, in the case of absorption types, a total cooling capacity of 10,000 or more B.T.U. per hour.

UL Standard--

(Concluded from Page 1, Col. 2)

Certain requirements on the input test and marking of equipment which have not previously been applied to heat pumps will not become effective until July 1, 1960. All other parts of the standard are effective at once.

A more detailed discussion of the standard will be published in the special heat pump issue of the NEWS, Sept. 21.

Fitzsimmons said that the marking of most listed heat pumps now comply with the new requirements. Manufacturers of heat pumps which do not comply have been asked to submit revised marking data for review by UL well in advance of the effective date.

The standard covers unitary, compression type heat pumps for heating and cooling which are intended to be employed in accordance with the National Electrical Code. They also apply to the combination of a supplementary electric heater or heaters.

It covers equipment rated not over 600 volts with motors rated not over 30 hp. (nominal). It does not cover equipment which requires a disconnect switch rated at more than 50 hp.

It also does not apply to reverse cycle room air conditioners, to air coolers classified by UL as heating and cooling appliances, or to heat pumps comprising field-connected refrigerant-containing components other than matched assemblies designed to be used together.

Heat Pushes Cooler Sales--

(Concluded from Page 1, Col. 5)

conventional water-cooled "packaged commercial" air conditioners apparently showed improvement, even though they have been losing ground rather steadily to air-cooled units for a couple of years. Exact figures on large central systems are hard to obtain, but most of the producers in this field have been reporting substantial gains this year.

Some figures out of the New York City area provide some pretty good indications of the gains made in the northern metropolitan areas. There seems to be agreement that retail sales of unitary air conditioners will pass the 200,000 mark for the year, the first time this figure has been reached in history. In 1958 the figure was 143,490 units, according to Consolidated Edison Co. figures. Wholesale sales of Carrier room air conditioners in the New York City area so far this year were reported double those of 1958, and for the Northeastern states are reportedly 75% ahead of 1958.

July billings for the packaged product lines of York Div., Borg-Warner Corp. continued the string of "best month in four years" which was started in April. Each month since that time has exceeded the same month in the past four or more years.

Henry M. Haase, York president, reported that billings in the firm's product lines are up 27% from the same period of 1958. The sale of central residential air conditioning has experienced the greatest upsurge in York's history, Haase said, with dealers reporting a steady and continuing demand for both new and existing structures.

The continuation of orders and the size of the mid-summer backlog has prompted York to urge many of its workers to delay their vacation until after the bulk of new model production is out of the way—possibly until the time of the company's traditional extended Christmas holiday.

The continuing improvement in sales and the late July and early August heat waves had its effect on the industry in many ways. Production of all types of air conditioning equipment continued well past the traditional "shutdown time" with the result that July production may have set all-time records for that month. Distributors and retailers were also establishing records for this period, and for the first two weeks of August, L & P Electric Co., New York Fedders distributor which lays claim to being the largest distributor of air conditioners in the country, reported its sales to be four times that of the similar period last year. Philadelphia distributors reported their July sales of room units at 8,015 units, as compared with 5,911 units for July, 1958. For the year sales were up better than 15%.

Q. Will there be a rush to produce room air conditioners and get them to the field before the revised excise tax ruling goes into effect?

A. Some manufacturers are said to have tried to build and provide some stocks of units in the field that will be tax free, but with the heavy sales activity in the late season, there probably hasn't been much of a build-up. And if the revised tax goes into effect by Oct. 1 or earlier, there will be little opportunity for much production before that time.

Q. Will prices be higher on air conditioning next year.

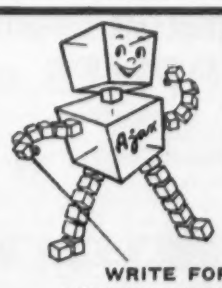
A. The chances are that prices will be higher, because general inflationary tendencies (labor and materials) continue to move higher. However, manufacturers would like to hold the line on prices, because they realize that one of their biggest problems is competition for the share of the available dollar that will be spent. The favorable factors for holding any price increases to a minimum are these:

1. Higher volume production can reduce costs per units.
2. Improvements in engineering design and in manufacturing techniques may cut some costs.

THE STORY ON MILITARY HEAT PUMP INSTALLATIONS

The facts behind the rumors in the

Sept. 21 Heat Pump Issue



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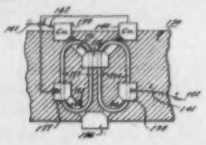
PATENTS

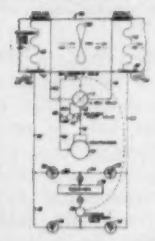
Week of May 5

2,884,762. THERMOELECTRIC HEAT-PUMPS. Nils E. Lindenblad, Princeton, N. J., assignor to Radio Corp. of America, a corporation of Delaware.



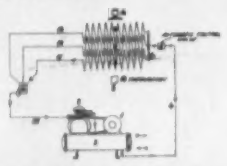
1. A thermoelectric heat-pump comprising a first thermocouple having a cold junction and a hot junction, said hot junction being disposed in heat exchange relationship with the ambient, a second thermocouple having a hot junction and a cold junction, said cold junction of said second thermocouple being arranged to be disposed in heat exchange relationship with a medium to be cooled, means for supporting said first and said second thermocouples in thermally isolated relationship, a flowable heat exchange medium, and means for soupling said hot junction of said second thermocouple to said cold junction of said first thermocouple in heat exchange relationship with each other through said heat exchange medium.

2,884,764. REVERSIBLE CYCLE SYSTEM. Gert K. A. Siggelin, Falls Church, Va., assignor to Desomatic Products, Inc., Falls Church, Va.



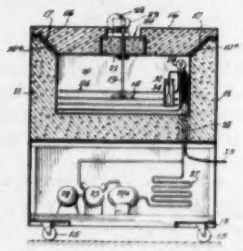
11. In an improved thermodynamic cycle the steps comprising compressing a refrigerant gas, serially condensing said refrigerant gas in a heat exchanger whereby heat is evolved and then evaporating the condensed gas in a second heat exchanger whereby heat is absorbed to produce cooling, passing an extraneous gas serially first in heat exchange contact with the gas being evaporated to cool the extraneous gas and then in contact with the first heat exchanger to reheat the extraneous gas, periodically reversing the cycle of refrigerant flow to pass compressed gas to the heat exchanger that was the cold evaporator to condense the refrigerant therein and to evolve heat, passing the condensed refrigerant then to the heat exchanger that was the condenser to evaporate the same absorbing heat and producing cooling, and simultaneously reversing the flow of extraneous gas over said heat exchangers in series with the reversal of refrigerant flow therein.

2,884,765. REFRIGERATING SYSTEMS. Karl Kristian Kobs Kroyer, Aarhus, Denmark.



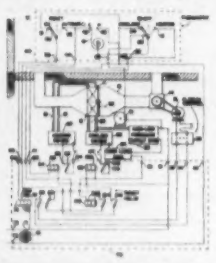
A switch-over device for use in an evaporation type refrigerating system having a plurality of evaporators connected in parallel and intended for successive operation, said device comprising a housing, a valve seat formed in said housing and having a plurality of annularly arranged inlet ports intended for connection to the respective evaporators of the system, a rotary valve body mounted for copperation with said valve seat, said valve body having a through port in a position such as to register with said inlet ports of the valve seat successively on rotation of said valve body. . . .

2,884,766. REFRIGERATED APPARATUS FOR POUR TESTING OILS. Wendell P. Cropper, Lansing, Ill., assignor to Standard Oil Co., Chicago, Ill.



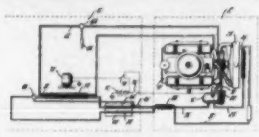
3. A refrigerated apparatus adapted for use in pour testing of lubricating oils which comprises in combination an open-topped vessel, an open-topped outer shell of substantially greater cubic displacement than that of said vessel, said vessel being disposed within said outer shell, massive heat insulation material arranged between said vessel and said shell, a bridge wall across the open top of said shell, said bridge wall being heat-insulated and dividing the open top of the inner vessel to provide two ports on either side of said bridge wall, removable heat-insulated covers for said ports. . . .

2,884,767. CONTROL APPARATUS. Alden J. Bitter, Elyria, and Warren H. Scott, Parma Heights, Ohio; said Scott assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.



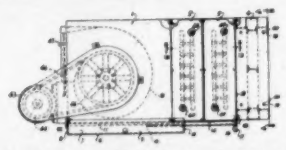
1. In control apparatus, a heat exchanger, a cooling device for supplying a quantity of cooled medium to said exchanger, a fan for circulating air from a space through said heat exchanger to cool the space, first actuator means having a switch associated therewith, circuit means connecting said switch to control the operation of said cooling device, second actuator means having a first and second switches associated therewith, said second switch being normally closed when said second actuator means is de-energized. . . .

2,884,768. AUTOMOBILE REFRIGERATING APPARATUS. Richard E. Gould, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



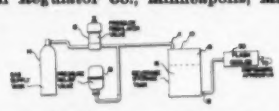
1. In an automobile having an engine compartment and a passenger compartment, an engine in said engine compartment for propelling the automobile, a refrigerant compressor, torque transmitting means drivingly connecting said compressor to said engine, a condenser, evaporator means, refrigerant flow means connecting said compressor, condenser and evaporator into refrigerant flow relationship, a refrigeration storage unit including a receptacle adapted to contain a eutectic solution. . . .

2,884,769. AIR CONDITIONER. Harry A. Meyer and Axel F. L. Anderson, Detroit, Mich., assignors, by mesne assignments, to American Radiator & Standard Sanitary Corp., New York, N. Y.



1. An air conditioner comprising a rectangular drain tank; a rectangular blower casing positioned over the drain tank and having an air inlet opening in one of its vertical walls; at least one scroll-shaped fan housing positioned within the rectangular casing with the eye of the fan housing extending at right angles to the inlet opening in said rectangular casing; at least one rectangular heat exchanger assembly secured against the aforementioned vertical wall of said blower casing; and a drain pan extending from the drain tank and beneath the heat exchanger assembly; said pan being mounted for retracting and expansible movements to adjusted positions beneath the heat exchanger assembly.

2,884,946. CONTROL APPARATUS. Donald George Anderson, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.



1. In liquid beverage dispensing apparatus; a source of gas under pressure; a beverage storage tank having an inlet and outlet; means connecting said source to said inlet to maintain gas under pressure above the liquid beverage in said storage tank so that the liquid can be dispensed from said outlet; said first mentioned means comprising a valve combination of an ambient temperature compensated pressure regulator valve and an ambient temperature compensated pressure relief valve. . . .

(To Be Continued)

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D. C.

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POSITIONS WANTED

EXECUTIVE SALES engineer—Application engineering, commercial refrigeration. 10 years Frigidaire, 12 years Carrier, proven record. Mature judgment, sound knowledge all components. Works well with young men. Will travel, Cleveland base. Age 50. BOX A63335, Air Conditioning, Heating & Refrigeration News.

MANUFACTURERS' REPRESENTATIVE—Northern Ohio, W. Penn. needs refrigeration lines to complement present large condensing unit equipment. Such as coils, filters, valves and other components. Office located in Cleveland Builders Exchange. Specializing in refrigeration and air conditioning. 25 years' experience. BOX A6338, Air Conditioning, Heating & Refrigeration News.

MANUFACTURERS' REPRESENTATIVE—registered P. E. wants major product line in refrigeration - air conditioning for Michigan. Will consider Northern Indiana and Ohio. 20 years in executive positions with national corporations. Broad experience in sales, design, service and systems. Aggressive and cooperative representation assured. BOX A6341, Air Conditioning, Heating & Refrigeration News.

POSITIONS AVAILABLE

SALES ENGINEERS qualified in engineered machinery refrigeration and air conditioning sales, who want to work and who want incentive and a future commensurate with their efforts, contact Walter L. Pharo, Vice President and General Manager, CANADIAN ICE MACHINE COMPANY, 65 Villiers Street, Toronto, Canada, manufacturers and distributors of York products throughout Canada for over 47 years.

AIR CONDITIONING product development engineer. Desire a graduate engineer, having 5 years' experience in window and builders units models. Send resume and salary requirements to: COOLERATOR DIVISION, McGRAW-EDISON COMPANY, 704 North Clark Street, Albion, Michigan Replies confidential.

COMBUSTION DEVELOPMENT engineer. Graduate engineer with at least five years' experience in the design of oil and gas space heating equipment. Will be responsible for product development work on oil and gas space heaters as well as electric heating equipment. Must be capable of supervising test work and secure A.G.A. and UL approvals. Will be required to follow projects through drafting and model shop and assist in establishing production and inspection procedures. Send resume and salary requirements to: COOLERATOR DIVISION, McGRAW-EDISON COMPANY, 704 North Clark Street, Albion, Michigan. Replies confidential.

PRODUCT ENGINEER with minimum of 5 years' experience as product design or production engineer on refrigeration or air conditioning packaged equipment. Excellent salary plus merit bonus plan with aggressive non-defense company. Write Chief Engineer, OAK MACHINERY CORPORATION, 578 Oak Street, Copiague, Long Island, N. Y.

PROJECT ENGINEER—To set up, and run coil department for nationally known manufacturer of air conditioners; located in New York City. Our staff knows of this ad. BOX ACH 422, 125 W. 41 Street, New York 36.

ENGINEER - MECHANICAL project engineer. Room air conditioner designer. Minimum 5 years' experience in sheet metal, plastics and refrigeration design. National brand manufacturer located in New York City. Our staff knows of this opening. BOX ACH 432, 125 W. 41 Street, New York 36. New York.

ENGINEER REFRIGERATION Controls—To head a department on design and development of commercial refrigeration control valves of all types; national corporation with midwestern manufacturing and engineering facility; salary and bonus commensurate with work background and ability. Send full details, qualifications and personal data to BOX A6172, Air Conditioning, Heating & Refrigeration News.

CABINET DESIGN & development engineer for commercial refrigeration manufacturer in Southeast. Experience with display cases desired. Please submit resume of qualifications and expected salary to BOX A6325, Air Conditioning, Heating & Refrigeration News. All replies held confidential.

REFRIGERATION PARTS — Young man for manager of refrigeration and air conditioning parts and supplies wholesaler in Atlanta, Georgia. Previous experience as counterman or branch manager in this business absolutely essential. Good salary and share in profits. Replies held confidential. Please give full particulars. BOX A6329, Air Conditioning, Heating & Refrigeration News.

MANUFACTURER'S REPRESENTATIVES, strong — aggressive — familiar with air conditioning to represent quality manufacturer of a complete line of package and remote air conditioning and heat pumps — territories open, Texas, Mississippi, Louisiana, Florida. Write giving complete resume to BOX A6331, Air Conditioning, Heating & Refrigeration News.

EXPERIENCED SERVICEMAN—Midwest office of leading manufacturer heating, air conditioning equipment needs man thoroughly experienced in reciprocating compressors capable of learning through training servicing of centrifugal compressors, heating and ventilating equipment. Send full details qualifications personal data to BOX A6336, Air Conditioning, Heating & Refrigeration News.

SALES ENGINEER—Established Chicago manufacturer is interested in adding an electrical engineer to its expanding New Products and Market Development Division. We prefer experience that has provided knowledge of the commercial refrigeration or air conditioning industries — specific experience with components manufacturing would be ideal. Ability to work well with customers' engineers and an aptitude for creative solution to commercial application problems are essential. Our plans allow ample room for the assignment of heavier responsibility commensurate with individual ability. Send resume giving full description of experience, training and present activity in confidence to BOX A6339, Air Conditioning, Heating & Refrigeration News.

GROWING CONCERN in New Jersey needs diversified experienced serviceman for commercial air conditioning, including built up systems and heating installation. Relocation expenses will be paid plus top hourly wage for qualified man. Send complete resume, including availability. BOX A6340, Air Conditioning, Heating & Refrigeration News.

EQUIPMENT WANTED

WANTED TO buy, one (1) Baker Ammonia Compressor. Model F. 6. P. 3½ x 3½, 4 cylinder either new, used, or rebuilt. Must be in A. No. 1 condition. Reply giving price, condition and location. BOX A6333, Air Conditioning, Heating & Refrigeration News.

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MISCELLANEOUS

ATTENTION REFRIGERATION Servicemen: Would you be interested in saving from 25 to 50% on many standard refrigeration and air conditioning parts and supplies? Send for our free circulars and catalogs. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

Servicing Automobile Air Conditioners

(Vol. 4 — 1959 Models)

BY C. DALE MERICLE

Like the preceding three volumes in this series (which are available in handy manual form), these articles are intended for the *experienced* refrigeration mechanic, not the novice, and are primarily designed to assist in emergency service.

Detailed step-by-step instructions on adjustment and replacement procedures are purposely omitted, partly to discourage the "do-it-yourself" clan and partly because major repair jobs for the most part will be performed by authorized service agencies of the manufacturers without whose cooperation this series could not have been written.

PONTIAC

Pontiac Motor Div.
General Motors Corp.
Pontiac 11, Mich.

Two types of systems comprise the 1959 Pontiac air conditioner line: the "Circ-L-Aire" built-in unit and the "Cool Pack" under-dash model.

Basic refrigeration system of the Circ-L-Aire model (Fig. 1) is the same as the 1958 model. Design of some components has been modified in the 1959 model, however.

Outward appearance of the 1959 Cool Pack under-dash unit (Fig. 2) is largely unchanged, but temperature control is obtained by an adjustable thermostat cycling the magnetic clutch and compressor instead of the hot gas by-pass valve used for temperature control on the 1958 model.

Refrigerant-12 is used in both 1959 systems. Complete charge is 4¾ lbs. in the Circ-L-Aire; 3½ lbs. in the Cool Pack.

Compressor and condenser arrangements are the same in both 1959 Pontiac systems.

Compressor is the 5-cylinder Frigidaire axial unit, which is driven through a magnetic clutch.

Condenser is mounted in front of the car radiator. Combination receiver, dehydrator, and sight glass assembly is located at the right side of the condenser.

Circ-L-Aire System

Evaporator of the Circ-L-Aire system is located on the extreme right side of the cowl in the engine compartment.

Thermostatic expansion valve, which is non-adjustable, is located just outside the evaporator housing in the engine compartment. This valve employs an external equalizer.

Blower assembly is also mounted on the cowl in the engine compartment. Same three-speed blower is used for both cooling and heating. Blower assembly includes vacuum diaphragms to position air valves or dampers to control air flow for cooling or heating and the proportion of outside to recirculated air. Conditioned air is delivered to car interior through three adjustable outlets on the dash.

Control panel is located on lower part of instrument panel to left of steering column. Three buttons and two levers are employed. Controls function in the same manner as the 1958 system, described in detail in Vol. 3.

Wiring diagram is shown in Fig. 3.

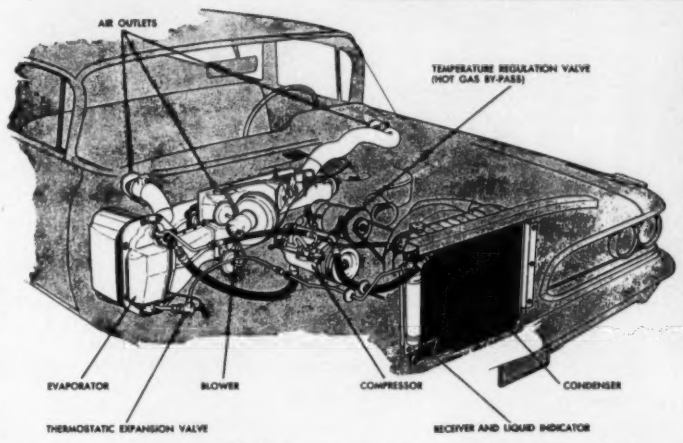

FIG. 1—Location of major components in 1959 Pontiac Circ-L-Aire system.

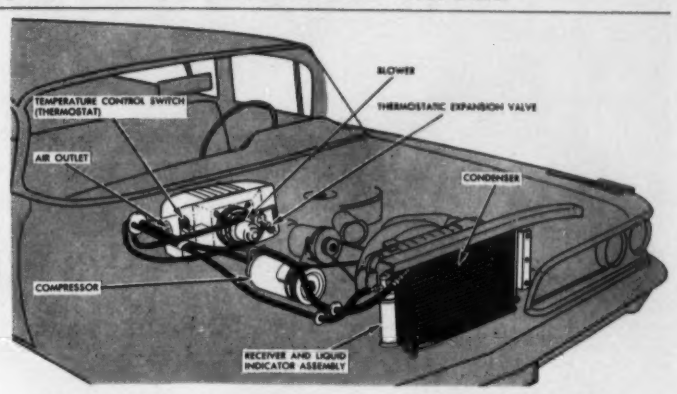

FIG. 2—Location of major components in 1959 Pontiac Cool Pack system.

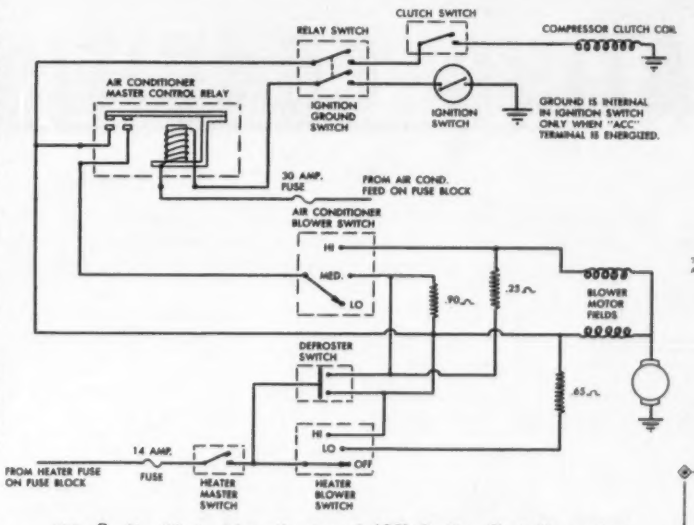

FIG. 3—Simplified wiring diagram of 1959 Pontiac Circ-L-Aire system.

Cool Pack System

Evaporator assembly of the 1959 Cool Pack unit, which is suspended beneath the dash, includes the evaporator coil, thermostatic expansion valve (non-adjustable), fan, adjustable air outlets, and controls. It is essentially the same as the 1958 unit except for having an adjustable thermostat for cycling the magnetic clutch and compressor to obtain temperature control.

Thermostat setting is adjusted by a sliding lever at top of case. In the 1958 model the same lever controlled the setting of the hot gas by-pass valve.

Wiring diagram of the 1959 Cool Pack system is shown in Fig. 4.

SERVICE HINTS

Evacuating

Both 1959 Pontiac systems must be evacuated following initial installation or opening for repairs.

Use of a separate vacuum pump and the doube evacuation method is recommended for both systems.

Charging

Both 1959 Pontiac systems are charged through the low side with Refrigerant-12 in the vapor state in the usual manner.

Complete charge is 4¾ lbs. in the 1959 Circ-L-Aire, 3½ lbs. in the 1959 Cool Pack.

Trouble Shooting

Service problems encountered with the 1959 Circ-L-Aire should be no different than those found on the 1958 Pontiac Circ-L-Aire system, so the suggestions given in Vol. 3 on the 1958 model should apply equally well to the 1959 system.

Service on the 1959 Pontiac Cool Pack system should be no different than those encountered on the typical under-dash unit depending on thermostatic cycling of the magnetic clutch and compressor for temperature control.

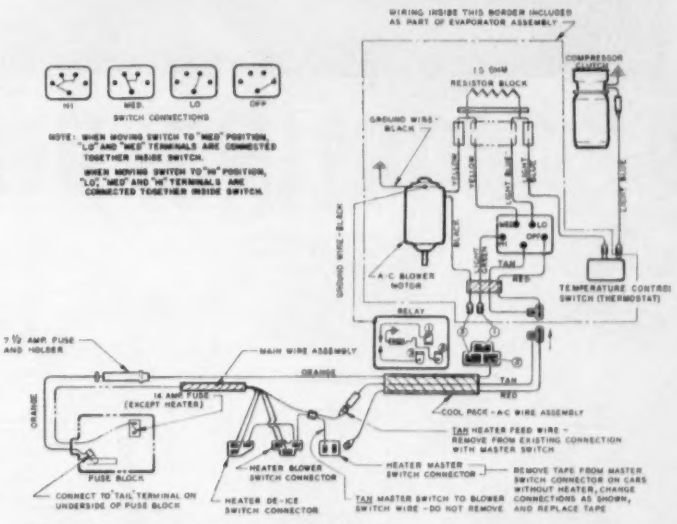
WIRING INSIDE THIS BORDER INCLUDED AS PART OF EVAPORATOR ASSEMBLY
SWITCH CONNECTIONS
15 OHM RESISTOR BLOCK
A-C BLOWER MOTOR
TEMPERATURE CONTROL SWITCH (THERMOSTAT)
RELAY
7½ AMP. FUSE AND HOLDER
MAIN WIRE ASSEMBLY
14 AMP. FUSE (EXCEPT HEATER)
FUSE BLOCK
COOL PACK—A-C WIRE ASSEMBLY
TAN HEATER FEED WIRE - REMOVE FROM EXISTING CONNECTION WITH MASTER SWITCH
HEATER BLOWER SWITCH CONNECTOR
HEATER MASTER SWITCH CONNECTOR
HEATER DE-ICE SWITCH CONNECTOR
REMOVE TAPE FROM MASTER SWITCH CONNECTOR ON CARS WITHOUT HEATER, CHANGE CONNECTIONS AS SHOWN, AND REPLACE TAPE

FIG. 4—Schematic wiring diagram of 1959 Pontiac Cool Pack air conditioner.

RSES Group's Educational Parley Set for Little Rock

LITTLE ROCK, Ark. — The Arkansas Chapter of the Refrigeration Service Engineers Society has announced that the 11th educational conference for the states of Arkansas, Missouri, Kansas, and Oklahoma will be held here at the Lafayette hotel Oct. 1-3.

Curtis Harris of Little Rock is chairman of the Conference Committee.

After registration on Thursday, Oct. 1, the conference will be called to order Friday at 9 a.m.

Opening-session speakers will be John Bopp of Ansul Chemical Co. and J. J. Mays of Sporlan Valve Co. Bopp will speak on "The Relationship of Profitability to Service and Installation Practices," and Mays on "The Big Gamble — The New Moisture Talk."

In the afternoon, K. W. Cash of Penn Controls, Inc. will talk on "Pressure Controls — Their Operation," and R. E. Kraft of Ranco, Inc. will discuss "Heat Pumps — Heat Pump Controls." A tour of Arkansas Power & Light Co. building is scheduled for Friday evening.

On Saturday morning, there will be a Mid-West Association business meeting followed by presentations by C. M. Knudson of Tecumseh Products Co. and Jack Karras, Arkansas Power & Light.

After lunch, John Sensenig, Latson Engineering Co., will speak on "Basic Theory of Air Conditioning," and then Bill Pietkicwicz of Kramer Trenton Co. will discuss "Air-Cooled Condenser."

Programmed for Saturday evening are a general reception and cocktail hour, followed by dining, dancing, and entertainment.

A meeting of the auxiliary also has been planned. It will include a tour of the Little Rock Air Force Base.

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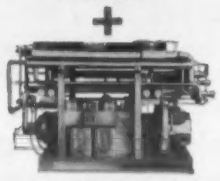

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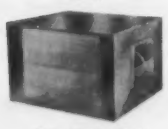
OR



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Dunham-Bush "CHC" units are available in two basic sizes—Model CHC-150 and CHC-300. The standard unit is basically designed for free standing use readily adaptable for semi-recessed applications. Each standard unit can be wall mounted, fully exposed or semi-recessed, as required for "off the floor" installations. Matching trim pieces are available for finishing purposes on semi-recessed applications.

Other available features include fresh air wall boxes to meet ventilation requirements calling for the introduction of fresh air up to 20% of the rated CFM: rear discharge sections and grilles to permit discharge of up to 50% of the rated CFM to adjacent rooms where the standard unit is installed on a common interior partition.

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